

ARI Contractor Report 2009-01

Survey Software Evaluation

**Beth A. Heinen, Ed Meiman,
Daniel A. Fien-Helfman, Sydney K. Ayine,
and Asad A. Khan**
ICF International

This report is published to meet legal and contractual requirements and may not meet ARI's scientific or professional standards for publication.

January 2009

**United States Army Research Institute
for the Behavioral and Social Sciences**

Approved for public release; distribution is unlimited.

**U.S. Army Research Institute
for the Behavioral and Social Sciences**

**A Directorate of the Department of the Army
Deputy Chief of Staff, G1**

Authorized and approved for distribution:



**MICHELLE SAMS, PhD.
Director**

Research accomplished under contract
for the Department of the Army

ICF International

Technical review by

Jacquelyn S. Randolph, U.S. Army Research Institute
Ronald J. Stump, U.S. Army Research Institute

NOTICES

DISTRIBUTION: Primary distribution of this Contractor Report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, Attn: DAPE-ARI-MS, 2511 Jefferson Davis highway, Arlington, Virginia 22202-3926.

FINAL DISPOSITION: This Contractor Report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this Contractor Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE					
1. REPORT DATE (dd-mm-yy) January 2009		2. REPORT TYPE Final		3. DATES COVERED (from. . . to) August 2008 – December 2008	
4. TITLE AND SUBTITLE Survey Software Evaluation				5a. CONTRACT OR GRANT NUMBER DASW01-03-D-0016 D.O.# 0038	
				5b. PROGRAM ELEMENT NUMBER 633007	
6. AUTHOR(S) Beth A. Heinen, Ed Meiman, Daniel A. Fien-Helfman, Sydney K. Ayine, and Asad A. Khan (ICF International)				5c. PROJECT NUMBER A792	
				5d. TASK NUMBER 102	
				5e. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) ICF International 9300 Lee Highway Fairfax, VA 22031				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences 2511 Jefferson Davis Highway Arlington, VA 22202-3926				10. MONITOR ACRONYM ARI	
				11. MONITOR REPORT NUMBER Contractor Report 2009-01	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES Contracting Officer's Representative and Subject Matter POC: Dr. Jacquelyn S. Randolph					
14. ABSTRACT (<i>Maximum 200 words</i>): ICF International reviewed 74 COTS Web-based survey software products for potential use by ARI researchers in survey development and administration. Products were reviewed based on their ability to meet the following key criteria: 1) survey development and hosting could be on ARI servers; 2) company size and reputation suggest the company would be able to provide quality service for many years; 3) the survey product meets Army and DoD security regulations and technical requirements, and 4) the survey features meet the feature needs of ARI researchers. Based on our review and analyses, we conclude that Confirmit EFM Professional and Vovici EFM Community best meet ARI's research needs and technical requirements. Confirmit EFM Professional, although expensive compared to the other products reviewed, has a high percentage of desired survey features available (81.58%) and is compatible with the IT and security requirements of ARI. Vovici EFM Community has a slightly lower percentage of survey features available (72.37%) than Confirmit EFM Professional, but is a more cost-effective solution and has a Certificate of Networkiness for an earlier version of the current product.					
15. SUBJECT TERMS Commercial off the shelf (COTS) Web-based survey software, Online data collection					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT Unlimited	20. NUMBER OF PAGES	21. RESPONSIBLE PERSON Diane Hadjosif Technical Publications Specialist 703-602-8047
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified			

ARI Contractor Report 2009-01

Survey Software Evaluation

**Beth A. Heinen, Ed Meiman,
Daniel A. Fien-Helfman, Sydney K. Ayine,
and Asad A. Khan
ICF International**

**U.S. Army Research Institute for the Behavioral and Social Sciences
2511 Jefferson Davis Highway, Arlington, Virginia 22202-3926**

January 2009

**Army Project Number
633007.A792**

**Personnel Performance
and Training**

Approved for public release; distribution is unlimited.

SURVEY SOFTWARE EVALUATION

EXECUTIVE SUMMARY

Research Requirement:

More than ever, computers and the Internet are being used to collect survey data from a variety of populations. Web-based surveys have many advantages (e.g., cost-effective and efficient), but also present some challenges (e.g., ensuring the protection of personally identifiable information). Because of these challenges, the United States Army Research Institute for the Behavioral and Social Sciences (ARI) contracted with ICF International (ICF), a global research and consulting firm, to conduct needs and requirements analyses and identify the commercial off the shelf (COTS) survey software programs which best meet ARI's needs.

Procedure:

This report summarizes findings and presents recommendations on the COTS Web-based survey software products which meet the needs of ARI survey researchers, can be housed on Army Knowledge Online (AKO) or ARI's server, and are compliant with Army and Department of Defense (DoD) information assurance regulations¹. ICF first conducted a needs analysis to identify the survey needs of ARI researchers. To determine ARI's survey software needs, ICF conducted two focus groups with ARI staff, five individual interviews with ARI staff and an ARI contractor, and disseminated a paper and pencil survey to ARI staff. The focus groups, individual interviews, and survey enabled ICF to ascertain ARI's survey software needs, software feature criticality, and information technology (IT) requirements. ICF team members then conducted a market analysis of 74 COTS Web-based survey software products. The findings and recommendations within this report are also based on a comprehensive review of information assurance regulations, Internet searches of potential survey software products, telephone software vendor meetings, and software testing of a subset of products that most closely meet ARI's research needs and technical requirements. A summary of the major findings in the COTS survey software selection is presented below.

Findings:

ICF reviewed 74 COTS Web-based survey software products for potential use by ARI researchers in survey development and administration. Products were reviewed based on their ability to meet the following key criteria: 1) survey development and hosting could be on ARI servers; 2) company size and reputation suggest the company would be able to provide quality service for many years; 3) the survey product meets Army and DoD security regulations and technical requirements, and 4) the survey products meet the feature and function needs of ARI researchers. Based on our review and analyses, we conclude that Confirmit EFM Professional and Vovici EFM Community are the two COTS Web-based survey software products that best satisfy ARI's research needs and technical requirements. Confirmit EFM Professional, although expensive compared to the other products reviewed, has a high percentage of desired survey

¹ The following Army and DoD information assurance regulations were reviewed: Army Regulation (AR) 25-1, AR 25-2, Department of Defense Instructions (DoDI) 8500-2, DoDI 8510-01, DoDI 8580-1, and DoDI 8910-01

features available (81.58%) and is compatible with the IT and security requirements of ARI. Vovici EFM Community has a slightly lower percentage of survey features available (72.37%) than Conformat EFM Professional, but is a more cost-effective solution and has a Certificate of Networthiness (CoN)² for an earlier version of the current product.

Utilization and Dissemination of Findings:

With the increased use of data collections via Web-based surveys and the rapidly evolving Web-based survey software industry, it is important to periodically evaluate COTS survey software programs to identify the product that best fits a company's needs. ARI should consider these research data when evaluating COTS Web-based survey software products.

² Army Networthiness Certification ensures all Automated Information Systems (AIS) on the Army Network are certified as to the capabilities, limitations, and potential impact to the Army Knowledge Enterprise (AKE). It also allows the Army's Chief Information Officer (CIO)/G-6 and U.S. Army Network Enterprise Technology Command (NETCOM) to establish accountability of and manage change to the Army Network.

SURVEY SOFTWARE EVALUATION

CONTENTS

	Page
INTRODUCTION	1
NEEDS ANALYSIS	3
Methodology	3
Results	4
INFORMATION ASSURANCE REGULATION REVIEW	8
Methodology	8
Results	8
MARKET ANALYSIS	11
Methodology	11
Results	13
COST ANALYSIS	21
Methodology	21
Results	22
CONCLUSIONS AND RECOMMENDATIONS	23
APPENDIX A: DESIRED FUNCTIONS AND FEATURES LIST CATEGORIES	A-1
APPENDIX B: FOCUS GROUP PROTOCOL	B-1
APPENDIX C: FOCUS GROUP QUESTIONNAIRE ON FEATURE CRITICALITY	C-1
APPENDIX D: SURVEY SOFTWARE IT AND SECURITY REQUIREMENTS	D-1
APPENDIX E: INITIAL COTS WEB-BASED SURVEY SOFTWARE PRODUCT LIST	E-1
APPENDIX F: SOFTWARE TESTING PROTOCOL	F-1
APPENDIX G: SOFTWARE TESTING QUESTIONNAIRE	G-1
APPENDIX H: COTS WEB-BASED SURVEY SOFTWARE REVIEW RESULTS	H-1
APPENDIX I: DETAILED FUNCTIONS AND FEATURES REVIEW OF PREZZA TECHNOLOGIES CHECKBOX SURVEY, QUESTION MARK PERCEPTION, SPSS DESKTOP AUTHOR, AND SPSS DIMENSIONS	I-1

CONTENTS (continued)

APPENDIX J: DETAILED FUNCTIONS AND FEATURES REVIEW OF COTS WEB-BASED SURVEY SOFTWARE FINALISTS	J-1
--	-----

APPENDIX K: DETAILED COST ESTIMATES FOR COTS SURVEY SOFTWARE PRODUCT FINALISTS	K-1
--	-----

LIST OF TABLES

TABLE 1. MARKET ANALYSIS CRITERIA.....	4
TABLE 2. SUMMARY OF RELEVANT ARMY AND DOD REGULATIONS	9
TABLE 3. COTS SURVEY SOFTWARE PRODUCT COMPARISON	15
TABLE 4. WEB-BASED SURVEY SOFTWARE VENDOR IT SPECIFICATIONS.....	16
TABLE 5. WEB-BASED SURVEY SOFTWARE VENDOR COMPANY AND SUPPORT INFORMATION.....	19
TABLE 6. CLIENT EXAMPLES FOR WEB-BASED SURVEY SOFTWARE VENDORS...	20
TABLE 7. WEB-BASED SURVEY SOFTWARE PRODUCT COSTS.....	22

INTRODUCTION

More than ever, computers and the Internet are being used to collect survey data from a variety of populations, including large-scale surveys of the active duty military and reserve populations (e.g., by the United States Army Research Institute for the Behavioral and Social Sciences [ARI] or the Defense Manpower Data Center [DMDC]). Web-based surveys have many advantages: they are cost-effective (e.g., eliminating postage), efficient (e.g., requiring little database cleaning following survey fielding), and effective (e.g., allowing for use of built-in skip patterns). Despite these advantages, the primary challenges of Web-based surveys are: 1) identifying the best Commercial Off the Shelf (COTS) Web-based survey packages to serve the particular agency, and 2) maintaining the level of Web-based security to ensure data safety and sensitivity. Based on these challenges, ARI contracted with ICF International (ICF), a global research and consulting firm, to conduct needs and requirements analyses and to evaluate COTS survey software programs.

The purpose of this project was to identify COTS Web-based survey software products that meet the needs of ARI survey researchers, can be housed on Army Knowledge Online (AKO) or ARI's server, and are compliant with Army and Department of Defense (DoD) regulations and policies on information assurance and other relevant guidance. Under this delivery order, ICF performed the following tasks to identify commercial survey software packages that best meet ARI's survey research needs while adhering to Army and DoD information assurance guidance:

1. Conduct project administration tasks (e.g., kick-off meeting, project plan, In-Process Reviews [IPR])
2. Perform an analysis of ARI's survey software needs
3. Review information assurance regulations
4. Perform a market analysis of COTS survey software products
5. Perform a cost analysis.

This report summarizes findings and presents recommendations regarding the COTS survey software products that best meet ARI's survey research needs and are consistent with Army and DoD guidance. The report findings and recommendations are based on input gathered from focus groups with twelve staff members at ARI headquarters in Arlington, VA., interviews with five ARI staff members and an ARI contractor, numerous telephone meetings with survey vendor representatives, and software testing and evaluation of the final four COTS survey product candidates to assess the presence and the usability of survey features.

The sections of this report include:

- Needs Analysis—In this section, we present our methodology and results regarding the identification of ARI's survey software requirements.
- Information Assurance Regulation Review—In this section we present our methodology and results regarding our review of Army and DoD information assurance guidance related to online data collection and survey software.

- **Market Analysis**—In this section we present our methodology and results related to the search for the COTS Web-based survey software products that best meet ARI’s research needs.
- **Cost Analysis**—In this section we present our methodology and results related to pricing of the four finalist survey software products.
- **Conclusions and Recommendations**—In this section we present our conclusions and recommendations.

Throughout this report “developer” refers to the individual who programs a questionnaire (i.e., inputs survey questions and formatting) into Web-based survey software. “Participant” refers to the individual answering a survey questionnaire.

Each of the above sections is presented below.

NEEDS ANALYSIS

ICF conducted an analysis of ARI's Web-based survey software requirements. Data gathered from focus groups and interviews with ARI staff members were used to develop criteria for the utilities and functionalities of software applications. The methodology and results of the needs analysis are summarized below.

Methodology

ICF performed the following five subtasks to conduct the needs analysis:

1. Solicit lists of desired functions and features from ARI staff,
2. Develop focus group protocol,
3. Conduct focus groups and distribute criticality questionnaire,
4. Analyze focus group data, and
5. Develop list of criteria for market analysis.

The methodology of each needs analysis subtask is detailed below.

Solicit Lists of Desired Functions and Features from ARI Staff

ICF software evaluation team members developed categories of Web-based survey software features (see Appendix A). This list of functions and features was provided to ARI researchers in developing their own lists of desired functions and features of COTS Web-based survey software platforms.

Develop Focus Group Protocol

ICF team members analyzed ARI staff's desired functions and features and developed the focus group protocol. The focus group protocol contained questions regarding the major strengths and weaknesses of currently used Web-based survey software in uploading, distributing, and downloading surveys, other survey needs of ARI researchers, and the criticality of desired functions and features for newly purchased survey software. A copy of the focus group protocol appears in Appendix B.

Conduct Focus Groups and Distribute Criticality Questionnaire

Using the focus group protocol, evaluation team members conducted two focus groups (five individuals attended the first session and seven individuals attended the second session) at ARI headquarters in Arlington, VA. Focus groups contained the appropriate personnel from ARI's Army Trends Analysis Research Unit (ATARU), Army Personnel Survey Office (APSO), Occupational Analysis Office (OAO), and Personnel Assessment Research Unit (PARU). A short paper-based survey questionnaire was completed by focus group participants to aid in the assessment of feature criticality. This criticality questionnaire appears in Appendix C.

Analyze Focus Group Data

ICF used qualitative data analysis techniques to analyze the focus group data, identifying themes related to functionality requirements and the criticality of each requirement. The themes that emerged from the focus groups are the basis for the market analysis criteria found in Table 1.

Develop List of Criteria for Market Analysis

ICF compiled a list of ARI staffs' critical and non-critical features and functions for COTS survey software, based on information from the focus groups, individual interviews, and criticality questionnaire. These features and functions became the criteria used to evaluate COTS survey software products in the market analysis.

Results

The analyses of information from the focus groups, individual interviews, and questionnaires resulted in a list of 78 survey features/functions and their criticality, reflecting the current needs of ARI researchers (see Table 1). The criteria are separated into four levels of criticality: 1) required, 2) critical to survey functionality, 3) improves survey functionality greatly, and 4) improves survey functionality somewhat. These criteria levels determined the order in which product features were reviewed.³

Table 1
Market Analysis Criteria

Item Number	Criteria
REQUIRED	
1.1	*Software to develop surveys can be installed on ARI servers
1.2	*Software to host surveys and survey database can be installed on ARI servers
1.3	*Developer interface is considered "easy-to-use" by individuals who are not proficient in Web development
1.4	*The software vendor must be recognized as a quality vendor and is expected to be offering/supporting the software for 3 years after purchase
CRITICAL TO SURVEY FUNCTIONALITY	
2.01	*Meets Army and DoD security regulations
2.02	*Ability to export data to a format compatible with SPSS or SAS
2.03	*Ability to do advanced branching forward in the survey
2.04	*Ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank)
2.05	Unlimited number of responses to surveys
2.06	Thorough and clear documentation/training

³ Note that there are no criteria with the following numbers: 3.19, 3.23, 3.34, 3.36, and 4.02. In the initial criteria list developed (reported in the first In-Process Review [IPR]), these criteria were mistakenly included, but were duplicates of criteria 2.13, 2.25, 3.06, 2.10, and 2.21, respectively. The criteria numbers in Table 1 were kept the same as were listed in the first IPR for consistency.

Item Number	Criteria
2.07	Ability to create professional-looking surveys
2.08	User-friendly developer interface, including ease of formatting question and response option text (e.g., bold, italics)
2.09	Ability to skip/ask particular questions based upon record data/demographic data (i.e. piping data from preloaded demographic data file)
2.10	Ability to show previous answers in the text of current questions (i.e. piping into question text)
2.11	Ability to add HTML code to question text and/or question responses
2.12	Advanced formatting (e.g., line spacing, line indent, column labels, line breaks, response column widths, wrapping in columns)
2.13	Ability to write/code survey branching logic (rather than only having the option to use a drop down list)
2.14	Ability to name (label) questions
2.15	Ability to add comment boxes, so participants can add comments throughout the survey
2.16	Ability to add graphics in the header (at beginning of survey)
2.17	Ability to add graphics in the question text
2.18	Ability to edit labels of navigation buttons (e.g., help button, frequently asked questions [FAQ] button, privacy act button, submit button)
2.19	Customizable templates (e.g., theme or cascading style sheets)
2.20	Spell Check
2.21	Offer respondents an easy way to review their answers to previous questions (i.e. without having to backtrack through every question) (e.g., jump function)
2.22	Ability to print out the question properties for the survey (e.g., page, question variable name, question text, and question scale)
2.23	Ability to export survey question text and response options to external document (e.g., Microsoft [MS] Word)
2.24	*Ability to remove a respondent from the survey distribution list during the fielding period so they do not receive future correspondence (e.g., reminder email)
2.25	Ability to track the exact question the participant answered prior to abandoning the survey
2.26	Ability to automatically create and assign IDs/passwords
2.27	Ability to filter email recipients (e.g., send only to participants who have not completed the survey, send initial email based on a participant database variable to overcome limits on sending mass emails)
2.28	Ability to export variable names and labels (with data) for use in SPSS or SAS
2.29	Ability to assign variable labels within the application
2.30	Ability to assign export response option values
2.31	Ability for participant to withdraw a survey (either one that has been electronically submitted or one that is partially complete)
IMPROVES SURVEY FUNCTIONALITY GREATLY	
3.01	Ability to assign export variable names
3.02	Ability to export data directly to SAS

Item Number	Criteria
3.03	Ability to have different types of response options in the same matrix question
3.04	Ability to Automatic number with the option of displaying numbers or not
3.05	Ability to add to and select from a response option library of commonly-used response option sets
3.06	Ability to add to and select from a question library of full questions (question text and response options)
3.07	Ability to show only the response options that were selected (or not) in a previous question (i.e. piping into response options)
3.08	Ability to randomize the order of response options
3.09	Automatically add response values as each response is added (e.g., summing percents)
3.10	Ability for system to keep historical log files (i.e., that record upload, deletion, and emails to survey respondents) that cannot be deleted by ARI
3.11	Ability to export data directly to Microsoft Access
3.12	Ability to randomize the order of questions
3.13	Ability to randomize the order of pages
3.14	Presence of qualitative data analysis functionality (e.g., keying in on words or phrases)
3.15	Ability to supplement easy developer interface with HTML or other coding for more control
3.16	Ability to create online help features (e.g., pop-up boxes or a mouse roll-over function) that displays definitions
3.17	Ability to import survey questions from external application, such as MS Word
3.18	Ability to branch participants backwards in the survey
3.20	Ability to export identical survey (i.e., formatting included) to external document (e.g., MS Word)
3.21	Ability to add comments to the survey once it is exported
3.22	Ability to change survey questions or response options after survey is in field without corrupting the data
3.24	Ability to do ranking and rating questions in one question type
3.25	Ability for respondents to withdraw a survey (e.g., comparable to filling out a paper form and decide not to submit it)
3.26	Ability to do sampling for extremely long surveys, so each participant does not have to complete entire survey
3.27	Ability to have different response options within one matrix question (e.g., sometimes have a Not Applicable (N/A) response option and other times not having N/A)
3.28	Ability to attach external documents to the dissemination email (e.g., a support letter from an Army official) or be able to imbed email signatures into the dissemination email
3.29	Ability for participant to clear a page or a specific question (e.g., radio button)
3.30	Ability to export data directly to SPSS or SAS
3.31	Ability for system to automatically create an archive/back-up of questionnaire/data
3.32	Ability to perform Advanced Page Layout (e.g., resize objects, layer objects, snap objects to a grid, and lock a page)
3.33	Ability to name (label) pages

Item Number	Criteria
3.35	Ability to have administrative control, such as being able to remove cases or reset cases (rather than going into U.S. Army Information Management Support Center [IMCEN] to do so) to allow participants who were inappropriately exited from the survey back in
IMPROVES SURVEY FUNCTIONALITY SOMEWHAT	
4.01	Ability to add graphics in the response options
4.03	Presence of an option to export a subset of questions vs. entire survey
4.04	Presence of optical scanning features
4.05	Ability for platform to automatically dump test data once activated
4.06	Presence of a feature that allows developers to easily check if skip patterns work without taking entire survey as participant
4.07	Ability to do data cleaning and some data analysis in the application
4.08	Ability to display basic figures/tables (e.g., cross tab) of certain important questions (e.g., ability to look at non-responses by rank)
4.09	Presence of a spell check library where commonly-used words or acronyms can be
4.10	Presence of meta-data capabilities
4.11	Ability to store the data in an encrypted format
4.12	Ability to create professional-looking emails
4.13	Ability to publish a survey to a transportable file that can be run on local machines (e.g., non-Internet)

* Denotes required features

Note. Criteria 3.19, 3.23, 3.34, 3.36, and 4.02 were eliminated because of duplication with other criteria listed.

INFORMATION ASSURANCE REGULATION REVIEW

The methodology and results of the review of information assurance regulations relevant to online data collections are summarized below.

Methodology

To review Army and DOD information assurance regulations, ICF compiled and examined the relevant regulations and developed a list of the relevant portions of each regulation.

ARI provided ICF with the appropriate Army and DoD information assurance regulations, including the following:

- Army Regulation (AR) 25-1: Army Knowledge Management and Information Technology
- Army Regulation (AR) 25-2: Information Assurance
- Department of Defense Instructions (DoDI) 8500-2: Information Assurance Implementation
- Department of Defense Instructions (DoDI) 8510-01: Information Assurance Certification and Accreditation Process
- Department of Defense Instructions (DoDI) 8580-1: Information Assurance in the Defense Acquisition System
- Department of Defense Instructions (DoDI) 8910-01: Information Collection and Reporting.

The ICF project team then worked with ICF information technology (IT) and security personnel to review the appropriate Army and DoD regulation documents and extract and simplify the regulations that are relevant to online data collection and Web-based survey software.

Finally, ICF compiled a list of regulations that are relevant to online data collection (found in Appendix D). This list was used as the basis of the market analysis and security review task.

Results

Table 2 presents a summary of Army and DoD regulations that are relevant to online data collection and storage of information on Army servers. Although other regulations mention data collection, AR 25-1 and AR 25-2 cover the subject in depth and are most relevant. Many of these regulations authorize the local information assurance (IA) organization (i.e., United States Army Information Management Support Center [IMCEN]) to make IA decisions. IMCEN is still developing many of its regulations, so until those are published, the COTS product chosen is subject to evolving standards. A more detailed breakdown of the regulations summary, including the regulation title and language, appears in Appendix D.

Table 2***Summary of Relevant Army and DoD Regulations***

Reg(s)	Section(s)	Summary of Relevant Text
AR 25-1	5-3	The highest security level of ARI survey data is confidential and so is not subject to regulation beyond AR 25-1, AR 25-2, and DoDI 5200.40.
AR 25-1	5-5	The U.S. Army Information Management Support Center (IMCEN) must approve all software installed on its servers.
AR 25-1	5-5	The highest security level of ARI survey data is confidential, and so the database management systems (DBMS) must be protected according to IMCEN standards for this type of data.
AR 25-1	6-1 j.	All products of the software (i.e. surveys) are the property of the U.S. Government. License agreement cannot include any ownership of the products by the software vendor.
AR 25-1	6-1 r.	The software chosen does not need to be supported by IMCEN (in terms of training and troubleshooting).
AR 25-1	6-2 g.	Preference is to be given to software that will be supported and continue to be upgraded (i.e., preference should be given to a vendor that has a strong likelihood of existing throughout the lifecycle of ARI's survey software need).
AR 25-1	6-2 g.	Data should be stored in a format independent of software vendor.
AR 25-1	6-2 g.	Data should be accessible in a standard format (i.e. one approved by IMCEN).
AR 25-1	6-2 e. (3)	Preference should be given to COTS already in DoD inventory.
AR 25-1	6-2 e. (3)	Purchases must be coordinated with the Army Small Computer Program Office (ASCPO).
AR 25-1	6-2 m.	Preference should be given to COTS products that include upgrades for at least 3 years after purchase.
AR 25-1	6-4 n.	Authentication must be achieved through Army Knowledge Online (AKO) Lightweight Directory Access Protocol (LDAP) or a waiver must be granted.
AR 25-1	6-4 n.	Secure Sockets Layer (SSL) must be enabled using DoD public key infrastructure (PKI) certificates for server authentication and client/server authentication.
AR 25-1	6-4 n.	The minimum security provided for sensitive by unclassified information is SSL.
AR 25-2	4-5 c.	An audit log must be available for the development of the survey and for the fielding of the survey.
AR 25-2	4-5 c.	Authentication of developers must include a unique identifier.
AR 25-2	4-5 c.	Authentication of developers should at a minimum be a two-factor mechanism.
AR 25-2	4-5 c.	The COTS product should be configurable to not allow anonymous
AR 25-2	4-5 c.	The COTS product should provide an auditable login log for developers.
AR 25-2	4-5 c.	The COTS product should be configurable to prevent logins after rules set forth in a pre-determined protocol have been met.
AR 25-2	4-5 f.	Any installation of a COTS product must be coordinated with IMCEN.

Reg(s)	Section(s)	Summary of Relevant Text
AR 25-2	4–6	License agreement must be reviewed to ensure it covers all uses needed by ARI.
AR 25-2	4–7	The COTS product will not use its own server application.
AR 25-2	4–7	The database must reside on a trusted server.
AR 25-2	4–20 e. (7)	The COTS product will use only approved access controls between the participant interface and the survey database.

MARKET ANALYSIS

ICF conducted a market analysis in which available COTS survey software products were evaluated against the criteria developed in the needs analysis. The methodology and results of the market analysis are summarized below.

Methodology

The methodology employed for the market analysis included Internet searches, software vendor telephone meetings, and software testing and evaluation. This analysis included two major subtasks:

1. Identify and review COTS Web-based survey software, and
2. Test candidate software.

The methodology of each market analysis subtask is detailed below.

Identify and review COTS Web-based survey software

ICF performed a thorough review of the currently available COTS survey software products based on ARI's needs and on Army and DoD information assurance guidelines.

Develop Initial Candidate Software List. To develop the initial list of software candidates, evaluation team members identified software packages advertised or reviewed in mainstream publications, such as computer software reviewers (i.e., C-NET and PC Magazine) and in common search engines (i.e., Google and Yahoo) as of October 2008. This search resulted in an exhaustive list of 74 COTS survey software products to review (found in Appendix E).

Revise List Based on "Required" Criteria (First Round of Review). Through Internet searches and telephone meetings with COTS survey software vendors, team members evaluated the initial list of 74 COTS survey software based on the "required" criteria. These "required" criteria include: 1) software to develop surveys can be installed on ARI servers; 2) software to host surveys and the survey database can be installed on ARI servers; 3) the developer interface is considered "easy-to-use" by individuals who are not proficient in Web development; and 4) the software vendor must be recognized as a quality vendor and be expected to offer/support the software for at least three years after purchase. The 4th criterion was rated on a 5-point Likert-type scale (1 = solid, 5 = poor), based on the following components and processes:

- Reputation: ICF review of the vendor website, discussions with colleagues who have similar needs, stock history if publicly traded, or other financial news, if available,
- Size: Number and size of clients listed on website,
- Quality: Website design and maintenance (this was used only when the website appeared to be of amateur quality), and
- U.S. Owned: Determined from website.

Products advanced to the second round of review if the vendor reported that: 1) their survey development software could be installed on ARI servers; 2) the hosting software and software

databases could be installed on ARI servers; 3) the hosting software allowed developers to enter survey questions and manipulate survey format through a graphical user interface (GUI) (i.e., non-coding interface); 4) the company's reputation, size, and quality combined was rated 1- 4 (i.e., not rated 5 = poor); and 5) the company was headquartered within the United States.

Revise List Based on "Critical" Criteria (Second Round of Review). ICF evaluation team members reviewed the survey software programs that were advanced to the second round of review based on the "critical" criteria identified in the needs analysis. A few examples of the "critical" criteria used for this round of review include the: 1) ability to export data to a format compatible with SPSS or SAS; 2) ability to do advanced branching forward in the survey; 3) ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank); and 4) ability to remove a respondent from the survey distribution list (during the fielding period) so they do not receive future correspondence (e.g., reminder email). A full list of the "critical" criteria used in this round of review can be found in Table 1. Products advanced to the subsequent third round of review if the vendor reported that all of the required criteria and more than 85% of the "critical" criteria and were available. Two vendors--Business Objects, an SAP Company and iMagic Software--were unresponsive when contacted. These two vendors were eliminated because their lack of responsiveness was potentially indicative of the low level of support a new customer might receive.

Revise List Based on "Improves Greatly" Criteria (Third Round of Review). Evaluation team members reviewed the survey software programs that were advanced to the third round of review based on the "improves greatly" criteria identified in the needs analysis. A few examples of the "improves greatly" criteria used for this round of review include the: 1) ability to assign export variable names; 2) ability to export data directly to SAS; 3) ability to randomize the order of questions; and 4) ability to do ranking and rating questions in one question type. A full list of the "improves greatly" criteria used in this round of review can be found in Table 1. Products advanced to the subsequent software testing round if the vendor reported that greater than 90% of the "improves greatly" criteria were available.

Software Testing (Fourth Round of Review). Four products advanced to the fourth and final round of review and were subject to software testing and evaluation. ICF coordinated with the four final candidate survey software vendors to obtain access to the software needing for testing and evaluation.

Preparation for testing of finalist products. Prior to testing the four finalist products, evaluation team members met with an IMCEN representative to identify the typical IMCEN testing procedures and software certification process and to identify ARI's local IT and security requirements. This information was used to help develop the IT and security requirements and software testing protocol. ICF team members also conducted telephone meetings with and solicited information from all finalist survey software product vendors to assess whether the survey software product would meet ARI's IT and security needs/requirements. A few examples of the IT and security information gathered from IMCEN and software vendors include: 1) server CPU/hardware capacity; 2) Web server supported; and 3) event log capability. A full list of IT and security review criteria are included in Table 4.

Based on the market analysis criteria, information procured from IMCEN, and our review of Army and DoD information assurance regulations, ICF developed a testing protocol and sample questionnaire for ICF staff to use when testing the 4 finalist COTS survey software products. The software testing protocol appears in Appendix F and the sample questionnaire appears in Appendix G.

Testing of finalist products. ICF contacted the four finalist COTS survey software products companies to obtain downloadable test versions. Current market practices involve trials that use software on the application developer's own servers, so ICF team members tested the software products on the vendor's (i.e., application developer) servers. Each of the four finalist vendors indicated that the candidate software products tested were identical in features and functionality to the downloadable versions of the survey software.

Using the testing protocol and sample questionnaire, evaluation team members tested each of the four finalist COTS survey software products. Two ICF team members independently tested and rated each feature's usability on a 5-point Likert-type scale from 1 (difficult) to 5 (easy). Large discrepancies in ratings (i.e., differences of 2 or more points) were rectified by a consensus group decision.

Collect additional company and support information for finalist products. ICF team members collected company and support information from all finalist survey software vendors to ensure that each finalist product company has the size and health suitable to a long-standing company. The company and support information collected include: 1) company revenue and profitability, 2) total number of employees, 3) number of help desk/support employees, and 4) number of research and development employees.

Results

Three major aspects of the survey software products were reviewed in the market analysis: 1) functions and features, 2) IT and security, and 3) company and support. The results of each of these reviews are presented below.

Functions and Features Review

Of the 74 initial COTS survey software products, 52 products were eliminated in the first round of review because of their software structure (i.e., no graphical user interface [GUI] to enter survey questions and formatting), requirement to be downloaded on survey vendor's servers, or inadequate company size, reputation, or location of ownership (i.e., companies that were not United States-based). Of the remaining 22 COTS survey software products evaluated in the second round of review, 13 products were eliminated because of a large percent (i.e., 15% or more) of unavailable "critical" features. Of the remaining 9 COTS survey software products evaluated in the third round of review, 5 products were eliminated because of a large percent (i.e., 10% or more) of unavailable features that would greatly improve survey development and administration. The reasons and stage at which each product was eliminated are listed in Appendix H. The following four products passed the first three rounds of survey functions and features review and were included in the software testing and evaluation phase of the market

analysis: Confrimit EFM Professional, Vovici EFM Community, WorldApp KeySurvey, and Zarca Interactive.

Four finalist products

Table 3 lists the percent of features available and the average usability ratings for each round of review and overall for each of the four finalist software products. The percent of features available was calculated by summing the number of available features (as determined by company report and/or software testing) divided by the potential number of features studied in that round. Usability ratings were averaged for tested features (i.e., features that were unavailable or not tested were not included in the average usability ratings). A more detailed comparison of the survey software finalist products appears in Appendix J.

Results of the features and functions review for Zarca Interactive suggest that, although available features achieved decent usability ratings (4.28/5), the product has significantly fewer survey features available than the other products tested. Because of the relatively large percent of unavailable features, we conclude that Zarca Interactive is not among those products which optimally meet ARI's needs.

Results of the features and functions review for Confrimit EFM Professional, Vovici EFM Community, and WorldApp KeySurvey are generally positive. While WorldApp KeySurvey possesses the highest percent of available features, it has the least favorable usability ratings of the three remaining products. Vovici EFM Community has the best usability ratings, but the lowest number of available features of the three remaining products. Confrimit EFM Professional appears to be the most powerful product with a good balance of available features and easy usability.

It is important to note that the presence or absence of each survey feature was assessed via vendor report in the first three rounds of review. ICF team members found in the testing round of the functions and features review that many vendors indicated a greater number of features available than were actually available. Therefore, the testing results for the finalist vendors (found in Appendix J) may display a lower percentage of features available than the previous round cutoff.

Table 3
COTS Survey Software Product Comparison

Features	Survey Vendors			
	Confirmit EFM Professional	Vovici EFM Community	WorldApp KeySurvey	Zarca Interactive
“Required” Features				
% of Features Available	90.32%	83.87%	93.55%	74.19%
Average Usability Rating	4.60	4.67	3.85	4.07
“Improves Greatly” Features				
% of Features Available	71.88%	62.50%	71.88%	50.00%
Average Usability Rating	4.31	4.54	4.22	4.67
“Improves Somewhat” Features				
% of Features Available	84.62%	69.23%	84.62%	61.54%
Average Usability Rating	4.88	4.50	4.33	3.25
Total % of Features Available	81.58%	72.37%	82.89%	61.84%
TOTAL Average Usability Rating	4.54	4.64	4.06	4.28

Note: see detailed breakdown in Appendix J.

Note: Usability ratings scale is 1 = difficult to 5 = easy.

Products of Particular Interest. A more detailed analysis of four products of particular interest to ARI (i.e., Prezza Technologies Check Box Survey, Questionmark Perception, SPSS Desktop Author, and SPSS Dimensions) appears in Appendix I. Results of the features and function review for SPSS Dimensions suggest that although the product allows for 93.55% of the “critical” features and 93.75% of the “improves greatly” features, the product has a graphical user interface (GUI) development limitation of 100 pieces of information (i.e., surveys with more than 100 pieces of information, including questions and instructions, can only be developed through coding). Because of this limitation, ICF team members did not pass SPSS Dimensions into the software testing round of the market analysis.

IT and Security Review

Confirmit EFM Professional, Vovici EFM Community, and Zarca Interactive all pass the IT and Security review due to their ability to easily integrate with the existing ARI and AKO systems using a Microsoft .Net framework and Internet Information Services (IIS) Web servers. These three products also had features similar to their competitors, such as the ability to hash passwords and having Lightweight Directory Access Protocol (LDAP) connectivity using Microsoft Exchange. On the other hand, WorldApp Key Survey, although a robust application, does not support a Microsoft .Net framework and requires use of Java Runtime Environment (JRE) and has not been tested using IIS. Therefore, the server requirements of WorldApp Key Survey do not suit ARI’s existing infrastructure. Table 4 presents the IT requirements and specifications of each of the four finalist COTS survey software products.

Both Confirmit EFM Professional and Vovici EFM Community have undergone and passed thorough security reviews.⁴ Both products are secure; thus, we recommend both Vovici EFM Community and Confirmit EFM Professional on the basis of security. Vovici EFM Community version 2.2 has achieved a Certificate of Networthiness from the Army. The certified version of Vovici EFM Community is an earlier version of the product currently offered (i.e., 4.0), but no major changes have been made that should impair the product's ability to maintain its Certificate of Networthiness. Nevertheless, an IMCEN review of IT requirements and security is still recommended.

Table 4
Web-Based Survey Software Vendor Information Technology (IT) Specifications

Survey Vendor Capabilities				
Requirements	Confirmit EFM Professional	Vovici EFM Community	WorldApp KeySurvey	Zarca Interactive
Server CPU/Hardware Capacity	Intel Pentium Core 2 or higher	Intel Pentium Core 2 or higher	<ul style="list-style-type: none"> ▪ Intel Pentium Core 2 or server side processor for better performance ▪ AMD Athlon - 64, Sempron or server side processor for better performance ▪ Apple - G5 or better ▪ SUN - UltraSparc III or better 	Intel Pentium Core 2 or higher (min required is Pentium 4)
Hard Drive	No information provided	80GB (Web and DB Server each)	▪ 60GB (Web and DB Server each)	40GB(Web Server) & 100GB (DB Server)
System Memory (RAM)	2GB(Web Server) -4GB (DB Server)	1GB -2GB	▪ 2GB - 4GB	2GB(Web Server) - 4GB (DB Server)

⁴ Confirmit EFM Professional's security review was the Foundstone Security Assessment (copyright © 2007 McAfee, Inc.) conducted by Foundstone Professional Services, A Division of McAfee, and Vovici EFM Community's security review was documented in the Certificate of Networthiness approved by the U. S. Army.

Survey Vendor Capabilities				
Requirements	Confirmit EFM Professional	Vovici EFM Community	WorldApp KeySurvey	Zarca Interactive
Web Server Supported	Internet Information Services (IIS)	Internet Information Services (IIS)	<ul style="list-style-type: none"> Internet Information Services (IIS) ver. 5.0 & 6.0 (not tested by vendor) Apache 1.3, 2.0 & 2.2 WebStar (Mac OS X) SunOne 	Internet Information Services (IIS)
Database Server Supported	MS SQL Server	<ul style="list-style-type: none"> MS SQL Server Oracle 9i, 10g 	<ul style="list-style-type: none"> Oracle 9i, 10g MySQL MS SQL Server 	MS SQL Server
Operating System Supported	Windows 2003 Server	<ul style="list-style-type: none"> Windows 2000 Server (32 bit) Windows 2000 Advanced Server (32 bit) Windows 2003 Server (32 bit) 	<ul style="list-style-type: none"> Any Compatible with Java 2 SDK 1.5 Tomcat 5.5 (tested by Vendor) 	Windows 2003 Server
Framework Supported	.Net 2.0	.NET 2.0	JRE (Supports Java Servlet Specification v.2.4 and 5 Java ServerPages v.2.0 Specification)	.NET 2.0
Survey Taking Browser Types Supported	Internet Explorer 6.0	<ul style="list-style-type: none"> Mozilla Firefox ver. 1.0 or higher Internet Explorer ver. 5.0 or higher Safari ver. 2.0 or higher 	<ul style="list-style-type: none"> Mozilla Firefox ver. 2.0.x or higher Internet Explorer ver. 6.0 sp2 or higher Safari ver. 2.0 or higher 	<ul style="list-style-type: none"> Mozilla Firefox 1.5 or higher Internet Explorer 5.5 or higher Safari ver. 2.0 or higher
Survey Creation Browser Types Supported	Internet Explorer 6.0	<ul style="list-style-type: none"> Mozilla Firefox ver. 1.5 or higher Internet Explorer ver. 6.0 sp2 or higher 	<ul style="list-style-type: none"> Mozilla Firefox ver. 2.0.x or higher Internet Explorer ver. 6.0 sp2 or higher Safari 2.0 or higher 	<ul style="list-style-type: none"> Mozilla Firefox 2.0 or higher Internet Explorer 6.0 or higher Safari 2.0 or higher

Survey Vendor Capabilities				
Requirements	Confirmit EFM Professional	Vovici EFM Community	WorldApp KeySurvey	Zarca Interactive
Application & Database Client Hosting Capability	✓	✓	✓	✓
Web Application/ Internet Connectivity Capability	✓	✓	✓	✓
Password Encryption Capability	✓ (SHA-256 Algorithm)	✓	✓ (MD5 Algorithm)	✓
Secure Socket Layer (SSL) Capability	✓ (128 bit)	✓ (128 bit)	✓ (128 bit)	✓ (128 bit)
American with Disabilities Act (ADA) 508 Compliance	✓	✓	✓	✓
Event Log Capability	✓	✓	✓	✓
Integration & Application Programming Interface (API) Capability	✓	✓	✓	✓
Lightweight Directory Access Protocol (LDAP)	✓	✓	✓	✓ (add-on module)
Ability to Send out emails to users	✓	✓	✓	✓

✓ Feature available

Company and Support Review

ICF gathered company and support information for each of the four finalist COTS survey software products. Table 5 lists information regarding company revenue and profitability, total number of employees, number of help desk and support employees, and number of research and development employees for each finalist company. This table suggests that all companies have the size and health suitable to a long-standing company.

Table 5
Web-Based Survey Software Vendor Company and Support Information

Survey Vendor	Confirmit	Vovici Corp	WorldApp	Zarca Interactive, Inc.
<i>Company and Support Information</i>				
Company revenue and profitability	The last three years revenue has ranged from \$17.3-\$34.2 and the last three years' profitability has ranged from \$.915 to \$4.6.	A private company owned by a multi-billion dollar venture capital firm called Austin Ventures	A private company that is cash flow positive and has experienced steady growth throughout its 7-year history.	A privately held company that has experienced 30-50% growth in each of the last three years.
Total number of employees	250	90	100	65
Number of Help Desk/Support employees	34	20	13	12
Number of Research & Development employees	120	20	17	45

Sources: Vendor self-reports

All four finalist companies service high profile and security-conscious clients, however, Vovici Corporation has the client base most similar to ARI. Table 6 lists example clients for each finalist company.

Table 6
Client Examples for Web-Based Survey Software Vendors

Confirmit	Vovici Corp	WorldApp	Zarca Interactive, Inc.
<ul style="list-style-type: none"> ▪ British Council ▪ Abt SRBI Inc. ▪ JP Morgan Chase ▪ CitiGroup ▪ Barclay's ▪ HSBC ▪ Prudential ▪ Tufts Health Plan ▪ Google ▪ HP ▪ Accenture ▪ Microsoft ▪ Manulife Financial 	<ul style="list-style-type: none"> ▪ Dept of Defense ▪ Dept of Homeland Security ▪ US Air Force (e.g., Hill Air Force Base [AFB], Kirtland AFB, Lackland AFB) ▪ US Army (e.g., Fort Lee, Fort Benning, Fort Jackson) ▪ US Army Soldier Support Institute ▪ US Coast Guard ▪ US Joint Forces Command ▪ US Marines (e.g., Center for Lessons Learned) ▪ US Navy (e.g., Navy Commander Operational Test and Evaluation Force, Naval War College, Naval Personnel Development Command, US Navy Inspector) ▪ Space and Naval Warfare Center (SPAWAR)US Military Entrance Processing Command 	<ul style="list-style-type: none"> ▪ Federal Aviation Administration (FAA) ▪ Federal Bureau of Investigation (FBI) ▪ Marine Corps Operational Test and Evaluation Activity (MCOTEA) ▪ United States Geological Survey (USGS) 	<ul style="list-style-type: none"> ▪ The Conference Board ▪ Union College ▪ Verizon

Sources: Vendor self-reports

Market Analysis Recommendations

The survey functions and features review revealed that Zarca Interactive did not meet ARI's research needs as well as the other finalist products; thus we conclude that Zarca Interactive is not among those products which optimally meet ARI's needs. The market analysis IT and security review revealed that WorldApp KeySurvey utilizes a framework that is incompatible with ARI's existing infrastructure; thus we conclude that WorldApp Key Survey does not meet ARI's technical requirements. Of the two products left in consideration (i.e., Confirmit EFM Professional and Vovici EFM Community), Confirmit EFM Professional has more available features that suit the needs of ARI researchers, but Vovici EFM Community has a Certificate of Networthiness for an earlier version of the current product. Both products' IT features should be easily supported by ARI, and the company and support information suggest that both companies have the size and health suitable to a long-standing company. Based on the overall market analysis, we conclude that both Confirmit EFM Professional and Vovici EFM Community are the products which best meet ARI's needs and technical requirements.

COST ANALYSIS

ICF conducted a cost analysis in which the detailed costs estimates were gathered and projected for the four finalist COTS Web-based survey software products. The methodology and results of the cost analysis are summarized below.

Methodology

The methodology employed for the cost analysis included Internet searches and telephone meetings with software vendors. This cost analysis included the following three subtasks:

1. Develop software configuration specifications for ARI's needs, including optional packages,
2. Request estimates from vendors, and
3. Review estimates and revise as necessary.

The methodology of each cost analysis subtask is detailed below.

Develop Software Configuration Specifications for ARI's Needs, Including Optional Packages

ICF developed specifications, based on focus groups and individual interviews with ARI staff and contractors, which describe ARI's online survey software needs to provide to COTS survey software product vendors. Such specifications included the costs of initial licensing, installation assistance, yearly support and maintenance fees, advanced add-on features, custom services, and training. Estimated costs were based on the following specifications:

- At least 5 developer licenses,
- At least 5 reporting licenses,
- Unlimited number of surveys,
- At least 60,000 completed survey responses per year,
- A vendor representative's assistance with installation on ARI's servers,
- 1 paper training guide, and
- 1 day of private training at ARI headquarters in Arlington, VA.

Software configuration specifications and the associated costs for each product are found in Appendix K.

Request Estimates from Vendors

ICF evaluation team members provided the survey software configuration specifications to each of the software vendors whose products were tested and evaluated. ICF requested a cost estimate from each vendor for the costs for initial licensing, license renewals, advanced features, software modifications, and training.

Review Estimates and Revise as Necessary

The evaluation team members compiled and documented each cost estimate received (see Appendix K). Costs for additional items listed on estimates (e.g., private labeling) were requested from the other vendors. The cost estimates for each vendor were revised as appropriate.

Results

The cost analysis revealed that products range widely from an average of \$15,000 per year to an average of \$54,000 per year (over a 5-year period). Costs were estimated based on expected needs for the 1st year after purchase and total cost for 5 years after purchase (results displayed in Table 7). Over a 5-year period, Vovici EFM Community is estimated to cost the least (i.e., \$75,975), while Confirmit EFM Professional is estimated to cost the most (i.e., \$264,075).

Detailed cost breakdowns for each finalist product appear in Appendix M. The estimates provided are for informational purposes only. It is worth noting that software vendors may discount product prices when multiple years' worth of software is ordered.

Table 7
Web-Based Survey Software Product Costs

Survey Vendor	Confirmit EFM Professional	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive
Estimated 1st-year cost*:	\$58,075	\$18,995	\$49,029	\$102,000
Estimated 5-year total cost*:	\$274,075	\$75,975	\$78,945	\$162,000

* Estimated costs include at least 5 developer licenses, at least 5 reporting licenses, unlimited number of surveys, at least 60,000 completed survey responses per year, a vendor representative's assistance with installation on ARI's servers, 1 paper training guide, and 1 day of private training at ARI.

CONCLUSIONS AND RECOMMENDATIONS

ICF analyzed ARI's survey software needs and reviewed the extent to which 74 COTS Web-based survey software products would meet those requirements. Based on our technical review and analyses, we conclude that Conformat EFM Professional and Vovici EFM Community best meet ARI's research needs and technical requirements.

The market and cost analyses revealed that Conformat EFM Professional offers a higher percentage of desired survey features (81.58%) than Vovici EFM Community and is compatible with the information technology (IT) and security requirements of ARI. Conformat EFM Professional, however, is the most expensive product reviewed, with an estimated cost of \$274,075 over five years. Vovici EFM Community has a Certificate of Networthiness for an earlier version of the current product and is a more cost-effective solution, with an estimated cost of \$75,975 over five years. Vovici EFM Community, however, has a slightly lower percentage of survey features available (72.37%) than Conformat EFM Professional. It is important to note that these recommendations are based on the current requirements of ARI and the current COTS Web-based survey software features and infrastructures. Because the Web-based survey software industry is dynamic and constantly evolving, ARI should reevaluate their Web-based survey software product on an as-needed basis.

Appendix A

Needs Analysis

Desired Functions and Features List Categories

Survey Software Functions and Features

USAGE LIMITS:

- Maximum number of active surveys in the field at any one time
- Maximum respondents per survey
- Maximum survey size (# of questions)

DEVELOPER FEATURES:

- Number of simultaneous developers in program at one time
- User roles (e.g., survey developer, report viewer, etc.)
- Support needed (e.g., phone, email, FAQ, online manual)

SYSTEM STRUCTURE:

- Real-time (while survey is in the field) access to data through interface
- Documentation/Training
- Integration options (e.g., integrate with personnel data)

SURVEY QUESTIONNAIRE:

- File export format (e.g., Word)
- File import capability (e.g., import a Word document to get question text in)
- Non-standard Item types
- Complex Routing
- Data piping
- Persistence (e.g., cookie, login)
- Authentication (e.g., username/password)

MAIL CAMPAIGN:

- Customizable "From" address
- Customizable "Reply To" address
- Type(s) of link to survey in email (e.g., URL, link with URL hidden, embedded passwords in URL)
- HTML format for email (as opposed to only text format)
- Type of participant tracking (e.g., started, completed, abandoned)
- Number of reminders

REPORTING:

- Online graphs
- Online tables
- Report export formats

SCORING:

- Scale scores
- Complex scoring

DATA:

- Data export formats
- Data export filtering

OTHER

Appendix B

Needs Analysis Focus Group Protocol

Focus Group Protocol for Needs Analysis

I. Introduction

Thank you for joining us today. My name is _____ and this is _____. We work for ICF International, which is the research firm hired to evaluate and recommend a survey software platform that best serves ARI's needs.

As part of this focus group, we would like to talk with you about:

- The pros and cons of Raosoft, your current survey software AND
- Your needs with regard to an online survey software platform.

Although we will be taking detailed notes on the information collected in this focus group, all data will remain anonymous. That is, we will not link your name or demographic information with any comments that you make. The results of the focus groups will be combined with the wish lists you provided to identify criteria against which we will evaluate many Web-based survey software platforms.

There are several ground rules for this session to help _____ taking notes:

- Speak clearly and one at a time
- There are no right or wrong answers
- We want to hear the good and the bad
- We respect and value differences of opinion
- Please avoid sidebar conversations

Are there any questions before we begin?

II. Focus Group Questions

Criticality/Clarification of Wish List Features *[take at most 40 minutes discussing this section]*

1. In question development, how much control is necessary in designing questions (e.g., matrix questions)?

Do you need to get into the HTML code to augment the standard offerings of the COTS software (e.g., add java script to do complex scoring that will determine skip patterns)?

2. How important is it to be able to create online help features, such as an electronic help document for participants to reference or pop-up boxes for certain questions that display definitions?
3. It was mentioned in the wish lists that you would like the ability to create parts of survey in different files and combine later into one survey. Would this take the form of a survey library that would include partial surveys that can be combined into one?

If the application has a Word document import function, would it be sufficient to combine Word documents and upload the combined survey (i.e., create the survey outside of the application and then import it).

4. Where in the survey is it necessary to be able to add graphics (e.g., header, question text, response option)?
5. We are trying to assess the level of conditional logic and branching you need for surveys. Please describe an example of the most complicated branching pattern you may need.
6. In terms of exporting the survey to Word or PDF, how close do you want the export to be to a final paper version?

Would you like to revise the survey once it is exported?

How important is it to export survey formatting (e.g., template) in addition to exporting question and response option text?

7. What functionality would you need in the testing phase (i.e., after survey development before survey launch)?

Is it adequate to be able to publish the survey (i.e., place it on the Web), test it, and clear all test data prior to giving out survey URL?

If not, please describe this function in its ideal form.

8. How often do you need to change survey features after the survey is in the field?

Do you need the ability to change survey question text while the survey is in the field?

Do you need the ability to add response options while the survey is in the field?

9. What type of participant tracking is required?

Do you need an application that records a unique ID for each case (e.g., IP address or some other way to link back to a PC)?

Do you need the ability to tell exactly which survey question was the last question the respondent answered (track where survey was abandoned)?

10. How important is it for a survey software platform to do data cleaning and analyses within the application (as opposed to being exported and all analyses and report development done in an outside program)?

Do you need to recode responses within the application?

Do you need to conduct statistics (e.g., mean median, chi square, standard deviation) within the application?

Would you use the results of these calculations within the survey (e.g., to determine skip patterns or response options shown in a question)?

11. How important is it for a survey software platform to do advanced reporting within the application (as opposed to being exported and reporting being done in an outside program)?

Do you need to customize the reporting within the application to display frequency tables, cross-tab tables, bar charts, pie charts?

At what level do you need to customize reports within the application?

- ☐ Only use templates provided by the application
- ☐ Make minor color or font changes
- ☐ Edit all aspects of an exhibit

How important is it for you to export the report into Microsoft PowerPoint or Excel?

12. Are there additional **absolutely critical** functions that are not standard on survey software programs and were not discussed or were not on the questionnaire?

13. How important are the following features over some of the previous survey development features we have discussed? *[list features we see as potentially limiting/problematic]*

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Pros/Cons of Raosoft/Interform *[leave at least 30 minutes for this section]*

We are interested to hear about the best and worst features of your current software platforms, Raosoft or Interform. I will be asking you a series of questions about the cons and then the pros of your current software. When answering each question, please state which software system you use.

Cons

14. Have you had any specific trouble with Raosoft or Interform with regard to usage limits (e.g., maximum number of active surveys, questions, or respondents)?

15. Are there any notable features missing with Raosoft's or Interform's developer features or system structure (e.g., number of developers at a time, access to data, documentation and support)?

16. Are there any notable features missing with Raosoft's or Interform's survey questionnaire (e.g., file export, item types, branching, piping, persistence)?
17. Are there any notable features missing with Raosoft's or Interform's email distribution and tracking?
18. Are there any notable features missing with Raosoft's or Interform's data analysis, scoring, or reporting?
19. Are there any notable features missing with Raosoft's or Interform's data exporting?
20. Are there any other notable features in which you struggled with Raosoft or Interform, significantly impacting your ability to do quality surveys?

Pros

21. Are there any notable features with regard to usage limits (e.g., maximum number of active surveys, questions, or respondents) that Raosoft or Interform does particularly well and you would like to see in a different survey software platform?
22. Are there any notable features that Raosoft or Interform does well with regard to developer features or system structure (e.g., number of developers at a time, access to data, documentation and support)?
23. Are there any notable features that Raosoft or Interform does well with regard to the survey questionnaire (e.g., file export, item types, branching, piping, persistence)?
24. Are there any notable features that Raosoft or Interform does well with regard to email distribution and tracking?
25. Are there any notable features that Raosoft or Interform does well with regard to data analysis, scoring, or reporting?
26. Are there any notable features that Raosoft or Interform does well with regard to data exporting?
27. Are there any notable features that Raosoft or Interform does well that are critical to your ability to do quality surveys?

II. Conclusions

Thank you for taking the time to provide input to this important project. We will do our best to incorporate your comments from today's meeting and the survey results to choose a software provider with as much advanced functionality to meet your needs. If you think of any other comments or suggestions you would like to provide, you can call or email me to provide more input. *[Pass out Beth's business card]*.

Appendix C

Needs Analysis

Focus Group Questionnaire on Feature Criticality

Name _____

	AT&U	A/BO	CMO	PMU
Group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Absolutely critical	Highly needed: high priority	Needed: moderate priority	Would be nice, but not a priority	Not desired
Question Library					
The ability to add to and select from a question library of full questions (question text and response options)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to add to and select from a response option library of commonly-used response option sets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Absolutely critical	Highly needed: high priority	Needed: moderate priority	Would be nice, but not a priority	Not desired
System Structure					
Publish a survey to a transportable file that can be run on local machines (e.g., non-Internet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to withdraw a survey (either one that has been electronically submitted or one that is partially complete)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-language capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System automatically creates an archive/back-up of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System allows for field/telephone interviewing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System keeps historical log files (i.e., that record upload, deletion, and emails to survey respondents) that cannot be deleted by ARI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Absolutely critical	Highly needed: high priority	Needed: moderate priority	Would be nice, but not a priority	Not desired
Mail Campaign					
Ability to <i>automatically</i> create and assign IDs/passwords	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to remove a respondent from the survey distribution list so they do not receive future correspondence (e.g., reminder email)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Absolutely critical	Highly needed: high priority	Needed: moderate priority	Would be nice, but not a priority	Not desired
Data Exporting/Tracking					
Ability to export data directly to SPSS	0	0	0	0	0
Ability to export data directly to SAS	0	0	0	0	0
Ability to export data directly to Microsoft Access	0	0	0	0	0
Ability to store the data in an encrypted format	0	0	0	0	0
Ability to assign export variable names	0	0	0	0	0
Ability to assign export response option values	0	0	0	0	0
Ability to track the exact question the participant answered prior to abandoning the survey	0	0	0	0	0

	Absolutely critical	Highly needed: high priority	Needed: moderate priority	Would be nice, but not a priority	Not desired
Questionnaire					
Ability to print out the question properties for the survey (e.g., page, question variable name, question text, and question scale)	0	0	0	0	0
Ability to have different types of response options in the same matrix question	0	0	0	0	0
Automatic numbering with the option of displaying numbers or not	0	0	0	0	0
Advanced Formatting (e.g., line spacing, line indent, column labels, line breaks, response column widths)	0	0	0	0	0
Advanced Page Layout (e.g., resize objects, layer objects, snap objects to a grid, and lock a page)	0	0	0	0	0
Customizable templates (e.g., theme or cascading style sheets)	0	0	0	0	0
Ability to add HTML code to question text and/or question	0	0	0	0	0
Ability to name (label) pages	0	0	0	0	0
Ability to name (label) questions	0	0	0	0	0
Ability to edit navigation button's label	0	0	0	0	0
Ability to show previous answers in the text of current questions (i.e. piping into question text)	0	0	0	0	0
Ability to show only the response options that were selected (or not) in a previous question (i.e. piping into response options)	0	0	0	0	0
Ability to skip/ask particular questions based upon record data/demographic data (i.e. piping data from preloaded)	0	0	0	0	0
Ability to randomize the order of response options	0	0	0	0	0
Ability to randomize the order of questions	0	0	0	0	0
Ability to randomize the order of pages	0	0	0	0	0
Automatically add response values as each response is added (e.g., summing percents)	0	0	0	0	0
Ability to write/code survey branching logic (rather than only having the option to use a drop down list)	0	0	0	0	0
Offer respondents an easy way to review their answers to previous questions (i.e. without having to backtrack through every question)	0	0	0	0	0
Qualitative data analysis functionality (e.g., keying in on words or phrases)	0	0	0	0	0

Appendix D

Information Assurance Review Survey Software IT and Security Requirements

Table D-1
Information Assurance Review: Survey Software Requirements

Reg	Section	Title	Text	Summary of Relevant Material
AR 25-1	5-3	Information system certification/ accreditation	c. NETCOM has overall responsibility for ensuring that all information systems are properly certified and accredited in accordance with the DITSCAP. MACOMs, PEOs, and direct reporting PMs will be responsible for certification and accreditation of MACOM, PEO, and direct reporting PM unique systems that they own and operate. Tenant IAMs are responsible for ensuring that tenant information systems are certified and accredited for that tenant organization. The DITSCAP ⁵ will be applied to all systems requiring certification and accreditation throughout their life cycle. (See also AR 25-2 and DoDI 5200.40.) Where applicable, all IA-related Government-off-the-shelf (GOTS) and COTS hardware, firmware, and software components and IT products used in the Army Information Infrastructure must be evaluated and acquired in accordance with the National Security Telecommunications Information Systems Security Policy (NSTISSP) No. 11, and other applicable national and DoD policy and guidance identified in this chapter or in AR 25-2.	The highest security level of ARI survey data is confidential and so is not subject to regulation beyond AR 25-1, AR 25-2, and DoDI 5200.40.
AR 25-1	5-5	Software security	a. Controls will be implemented to protect system software from compromise, subversion, or tampering. The installation IAM, Configuration Management Board, Configuration Control Board, and designated approval authority (DAA) must approve all software used on Army networks prior to installation and operation.	IMCEN must approve all software installed on its servers.
AR 25-1	5-5	Software security	b. When database management systems (DBMS) containing classified defense information are used, the classified identifiable element (for example, word, field, or record) within the database must be protected according to the highest security classification of any database element. If the database cannot provide field protection, then it should provide record protection to the highest security classification level of the fields within the record. Database systems that do not provide protection at the record or field level will be restricted to operation in the dedicated or system high security mode. In all cases, the DBMS must meet the minimum trust requirements. (For more information, refer to AR 25-2.)	The highest security level of ARI survey data is confidential, and so the DBMS must be protected according to IMCEN standards for this type of data.
AR 25-1	6-1 j.	IT support principles: <i>Product ownership.</i>	The products of Army-related work are the property of the U.S. Government, regardless of the ownership of the automation hardware or software.	All products of the software (i.e. surveys) are the property of the U.S. Government.

⁷ DITSCAP: Defense Information Technology Security Certification and Accreditation Process

Reg	Section	Title	Text	Summary of Relevant Material
				License agreement cannot include any ownership of the products by the software vendor.
AR 25-1	6-1 r.	IT support principles: <i>Installation-level technical support and service.</i>	(2) Since DOIMs cannot provide equal technical support (for example, troubleshooting and training for all COTS hardware and software products), lists of supported products may be promulgated that restrict the scope of support to the listed products. In establishing such lists and levels of support, installations will not restrict the use of the common infrastructure of any JTA-A-compliant information system. The lists will not be used as the justification for eliminating competition in contracting. Supported organizations and IT fielding organizations that rely on common network capabilities may deviate from supported product lists on an exception basis only.	The software chosen does not need to be supported by IMCEN (in terms of training and troubleshooting).
AR 25-1	6-2 g.	Computing services: <i>Standard software applications.</i>	(5) COTS products or existing GOTS software applications will be preferred to funding new application development. The suitability of COTS or GOTS applications for satisfying operational requirements will be evaluated prior to initiating a development effort. Evaluation should include not only identification of COTS or GOTS products that can satisfy DoD, Army, or system-specific requirements, but also an assessment of the likelihood that the product or subsequent versions of the product will be available and supported throughout the life cycle of the system.	Preference is to be given to software that will be supported and continue to be upgraded (i.e. preference should be given to a vendor that has a strong likelihood of existing throughout the lifecycle of ARI's survey software need.)
AR 25-1	6-2 g.	Computing services: <i>Standard software applications.</i>	(6) Software applications will be reviewed at system milestone reviews. The review will be based on a business case that considers information exchange requirements and cost effectiveness as viewed from an Army-wide, not individual system, perspective. At a minimum, software applications will be designed to— (a) Permit users to access shared data in a consistent standards-based approach, independent of specific vendors' IT. (b) Be independent of vendor-specific data management and access schemes. (c) Provide users with transparent access to nonlocal data. (d) Permit use of data and information as Army-wide assets.	Data should be stored in a format independent of software vendor.
AR	6-2 g.	Computing	(7) Use standard data formats as approved for use by the DoD	Data should be

Reg	Section	Title	Text	Summary of Relevant Material
25-1		services: <i>Standard software applications.</i>	Net-Centric Data Management Program described in chapter 4 of this regulation.	accessible in a standard format (i.e. one approved by the IMCEN).
AR 25-1	6-2 e. (3)	Computing services: <i>Office automation. Enterprise software licenses.</i>	(a) The Defense Supplement to the Federal Acquisition Regulation (DFARS) subpart 208.74, requires DoD components to purchase from the DoD inventory before buying the product from another source. When an activity requires a COTS product, the supporting DOIM will determine if it is available under the DoD Enterprise Software Initiative (ESI). Enterprise software agreements (ESA) negotiated with specific software publishers or their agents provide the best available prices, terms and conditions. The DoD ESA is the DoD implementation of the Federal-wide SmartBUY program.	Preference should be given to COTS already in DoD inventory.
AR 25-1	6-2 e. (3)	Computing services: <i>Office automation. Enterprise software licenses.</i>	(c) The DOIMs will coordinate their acquisition plans with the ASCPO ⁶ concerning specific products prior to entering into an agreement with any COTS vendors. If the existing ESA does not contain the desired terms and conditions or prices, the DOIM must notify the ESA manager so that the manager may improve the existing ESA prior to the DOIM's executing any other agreement. The ASCPO is responsible for authorizing new ESA agreements and for granting waivers for Army activities to acquire an ESI-managed COTS product from any other source. The ASCPO Web site is http://pmscp.monmouth.army.mil . See also the DoD ESI homepage, which lists all ESI-managed software: http://www.don-imit.navy.mil/esi/ .	Coordinate purchase with ASCPO.
AR 25-1	6-2 m.	Computing services: <i>Life-cycle depreciation.</i>	In planning life-cycle requirements and calculating economic benefits of automation IT, 3 years from the initial date of installation will be used as the metric for obsolescence of common-use IT. Serviceability, maintainability, and utility will also be used as factors to consider in specific life-cycle replacement decisions. This metric may vary according to mission requirements. System planning should include provisions for product upgrades during the projected life span to cover potential obsolescence, lack of vendor support, support of information assurance and requirements, and incorporation of alternative products or technologies when such changes are justifiable and cost effective.	Preference should be given to COTS products that include upgrades for at least 3 years after purchase.
AR 25-1	6-4 n.	Telecommunications systems and services:	(2) AKO (www.us.army.mil) is the enterprise portal for Army unclassified intranets and the NIPRNET. AKO is the single Army portal for authenticating users to gain access to Army	Authentication must be achieved through AKO

⁸ Army Small Computer Program Office

Reg	Section	Title	Text	Summary of Relevant Material
		<i>Internet (World Wide Web (WWW)), intranets, and extranets.</i>	<p>systems and Web servers. Existing Army portals or Web servers with authentication services will migrate authentication support to AKO unless waived by CIO/G-6. The AKO-S is the enterprise portal for classified intranets and the SIPRNET. The use of AKO and AKO-S enables optimal sharing of Army information and knowledge resources across the entire Army enterprise. Army activities will maximize their use of AKO resources, features, and tools in order to reduce the need for installation and MACOM investment in the same types of IT resources.</p> <p>(a) Army Web-enabled business applications are required to be linked to the AKO portal. Initial minimum standard to link applications to AKO is a URL link on the Army portal. The objective standard to link applications to AKO is to use the AKO directory services for authentication as well as a URL link on the Army portal.</p> <p>(b) Proponents are required to establish the appropriate mechanisms to protect sensitive information from being accessed by unauthorized individuals. AKO is responsible for generating user IDs and accounts, performing authentication via secure Lightweight Directory Access Protocol (LDAP) directory services, publishing updates to the technical mechanism used for directory services, and incorporating appropriate security measures. <u>All applications, Web sites, and messaging services will use the AKO LDAP to authenticate users unless the CIO has granted a waiver.</u></p> <p>(8) Organizations requiring private Web sites (for example, intranets, extranets) must register them with the NETCOM/9th ASC Theater Network Operations and Security Center (TNOSC) and assure that the secure sockets layer (SSL) is enabled and that PKI encryption certificates are loaded. Use of Internet protocol restriction by itself is insufficient; such sites will be considered publicly accessible rather than private. PKI Web server certificates may be obtained from the NETCOM/9th ASC TNOSC.</p> <p>(a) <u>All Web applications will use AKO LDAP to authenticate clients, unless waived by NETCOM/9th ASC.</u></p> <p>(b) All unclassified, private Army Web servers will be enabled to use DoD PKI certificates for server authentication and client/server authentication. The following type of Web server is exempt from this mandate: any unclassified Army Web server providing nonsensitive, publicly releasable information resources categorized as a private Web server only because it limits access to a particular audience only for the purpose of preserving copyright protection of the contained information sources, facilitating its own development, or restricting access to link(s) to limited access site(s) (and not the information resources).</p>	<p>LDAP or a waiver must be granted.</p> <p>SSL must be enabled using DoD PKI certificates for server authentication and client/server authentication.</p>
AR 25-1	6-4 n.	Telecommunications systems and services: <i>Internet (World Wide Web (WWW)), intranets, and extranets.</i>		

Reg	Section	Title	Text	Summary of Relevant Material
AR 25-1	6-4 n.	Telecommunications systems and services: <i>Internet (World Wide Web (WWW)), intranets, and extranets.</i>	(9) To ensure ease of access, public Web sites that collect sensitive but unclassified information from the general public as part of their assigned mission are authorized to use approved commercially available certificates to provide SSL services. Select from the trusted and validated products lists on DISA's Web site (http://iase.disa.mil/common/index.html).	The minimum security provided for sensitive but unclassified information is SSL.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(4) Verify systems are configured to automatically generate an auditable record or log entry for each access granted or attempted.	Audit log must be available for the development of the survey and for the fielding of the survey.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(5) Validate that systems identify users through the user's use of unique user identifications (USERIDs).	Authentication of developers must include a unique identifier.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(6) Validate that systems authenticate users through the use of the CAC as a two-factor authentication mechanism. The CAC has certificates on the integrated circuit chip (ICC), and will be used as the primary user identifier and access authenticator to systems.	Authentication of developers should at a minimum be a two-factor mechanism.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(7) Validate system configurations to authenticate user access to all systems with a minimum of a USERID and an authenticator when the systems are incapable of CAC enablement until these are replaced. An authenticator may be something the user knows (password), something the user possesses (token), or a physical characteristic (biometric). The most common authenticator is a password.	Authentication of developers should at a minimum be a two-factor mechanism.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(9) Validate that system configurations prohibit anonymous accesses or accounts (for example, Student1, Student2, Patron1, Patron2, anonymous).	COTS should be configurable to not allow anonymous logins
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(12) Verify that system configurations generate audit logs, and investigate security event violations when the maximum number of authentication attempts is exceeded, the maximum number of attempts from one IS is exceeded, or the maximum number of failed attempts over a set period is exceeded.	COTS should provide an auditable login log for developers.
AR 25-2	4-5 c.	Minimum information	(13) Reinstate accesses only after the appropriate IA (for example, SA/NA) personnel have verified the reason for	COTS product should be

Reg	Section	Title	Text	Summary of Relevant Material
		assurance requirements: <i>Access Control</i>	failed log-on attempts and have confirmed the access-holder's identity. Permit automatic account unlocking, for example, after an established time period has elapsed, as documented in the C&A package and approved by the DAA, based on sensitivity of the data or access requirements.	configurable to prevent logins after rules set forth in a pre-determined protocol have been met.
AR 25-2	4-5 c.	Minimum information assurance requirements: <i>Access Control</i>	(14) If documented in the C&A package and authorized by the DAA, time-based lockouts (that is, access is restricted based on time or access controls based on IP address, terminal port, or combinations of these) and barriers that require some time to elapse to enable bypassing may be used. In those instances the DAA will specify, as a compensatory measure, the following policies: (a) Implement mandatory audit trails to record all successful and unsuccessful log-on attempts. (b) Within 72 hours of any failed log-on and user lockout, IA personnel will verify the reason for failure and implement corrective actions or report the attempted unauthorized access. (c) The SA will maintain a written record of all reasons for failure for 1 year.	COTS product should be configurable to prevent logins after rules set forth in a pre-determined protocol have been met.
AR 25-2	4-5 f.	Minimum information assurance requirements: <i>Configuration management requirements</i>	(4) Modifying, installing, or downloading of any software on any computer system may affect system C&A and must be evaluated and approved by the IAM with the local CMB, CCB, and DAA.	Any installation of a COTS product must be coordinated with IMCEN.
AR 25-2	4-6	Controls	d. All COTS software used on ISs will be fully licensed (under U.S. Copyright Law).	License agreement must be reviewed to ensure it covers all uses needed by ARI.
AR 25-2	4-7	Database Management	h. The SO will place databases on isolated and dedicated servers with restricted access controls. DBAs will not install other vulnerable servers or services (for example, web servers, ftp servers) that may compromise or permit unauthorized access of the database through another critical vulnerability identified in the additional servers or services.	The COTS product will not use its own server application.
AR 25-2	4-7	Database Management	i. Databases should be hosted on trusted military IS or networks. As part of the C&A process, the CA and DAA will review and approve a detailed risk management process as documented in the C&A package before operational implementation of databases located in contractor owned, operated, or managed networks.	The database must reside on a trusted server.

Reg	Section	Title	Text	Summary of Relevant Material
AR 25-2	4-20 e. (7)	Network security: <i>Protection of internal networks (Storage area configurations)</i>	(f) Implement extranet connections through a multi-tiered and layered approach requiring separate and distinct servers across the environment for each tier, and minimally include— 1. User access tier, usually through a Web site that offers static pages and will be SSL enabled as a minimum. 2. Application tier, authenticates authorized users, access, and interfaces between the user and the data. 3. Protection of the database or data tier (for example, flat files, e-mail), information that is accessed by the application on behalf of the user.	The COTS application will use only approved access controls between the participant interface and the survey database.

NOTE: DoDI 8500-2 and 8910-01 did not provide relevant guidance beyond AR 25-1 and 25-2. Further, specific regulations concerning COTS are to be provided by IMCEN. These regulations are currently in progress and so will not be used for evaluation of a COTS product.

IMPORTANT CLARIFICATION: In the previous regulations, it is assumed that the term “user” will refer to the ARI developer when discussing the use of the COTS application and will refer to the survey participant when discussing accessing a database through a Web interface.

Appendix E

Market Analysis

Initial COTS Web-Based Survey Software Product List

Table E-1
Initial COTS Web-Based Survey Software Product List

Vendor	Product	URL
ActiveCampaign	iSalient	http://activecampaign.com/isalient/
Anderson Bell Corp	WebSurv	http://www.andersonbell.com/
Apian Software	SurveyPro	http://apian.com/software/
Business Objects, an SAP Company	Business Intelligence	http://www.businessobjects.com/?extcmp=07q3am_cio_tdw1_1
ChumpSoft	perlIQuestionnaire	http://www.chumpsoft.com/products/perlq/
ChumpSoft	phpQuestionnaire	http://www.chumpsoft.com/products/phpq/
ClassApps	SelectSurvey ASP TM	http://www.classapps.com/
ClassApps	SelectSurvey.NET	http://www.classapps.com/
Confermit	Confermit EFM	http://www.confermit.com/
Confermit	Confermit MR	http://www.confermit.com/
CustomerSat	Self-Service	http://www.customersat.com/index2.htm
Digvey	Composer/ Launcher/ Analyzer	http://www.digivey.com/
Electronic Market Surveys	QS Survey System	http://www.emssurveys.com/
Ennect Online Survey Software	EnnectSurvey	http://www.ennect.com/Survey/
Golden Hills Software	SurveyGold	http://www.surveygold.com/
Grapevine Surveys	Grapevine	http://www.grapevinesurveys.com/
Gravic, Inc.	Remark Web Survey Software	http://www.gravic.com/remark/websurvey/
Hosted Survey	Basic ASP	http://www.hostedsurvey.com/home.html
Hosted Survey	Enterprise API	http://www.hostedsurvey.com/home.html
iMagic Software	iMagic Survey Pro	http://www.imagicsurveysoftware.com/
Infopoll	Infopoll	http://infopoll.com/live/surveys.dll/web
Inquisite	Inquisite EPM	http://www.inquisite.com/
Inquisite	Inquisite Survey	http://www.inquisite.com/
InSite Survey Systems, Inc.	InSite Survey Systems	http://www.insitesurveys.com/Site/
InstantSurvey	InstantSurvey	http://www.instantsurvey.com/
Ipathia, Inc	SuperSurvey	http://www.supersurvey.com/
JetMan Productions, Inc.	SurveyKey	http://www.surveykey.com/
Jive Software	Clearspace Community	http://www.JiveSoftware.com/Community/
LiveSurveys	LiveSurveys	http://www.livesurveys.com/
mySmartSolutions	Surveyo	http://www.surveyo.com/
ObjectPlanet, Inc.	Opinio	http://www.objectplanet.com/opinio/
PerfectForm (Formerly Quask)	PerfectForms (Formerly Quask)	http://www.perfectforms.com/
PollCat	Survey Pro	http://www.pollcat.com/
PollCat	Surveys Enterprise	http://www.pollcat.com/
PollCat	Surveys for Workgroups	http://www.pollcat.com/

Vendor	Product	URL
Prezza Technologies, Inc.,	Check Box Survey	http://www.UltimateSurvey.com/
PulseWare	PulseWare	http://www.pulseware.com.au/
Qualtrics	SurveyZ!	http://www.surveyz.com/
Questionmark	Questionmark Perception	http://www.questionmark.com/us/tryitout.aspx
Raosoft	Interform	http://www.raosoft.com/products/interform/
Reliant Strategic Talent Management Solutions	ZipSurvey	http://www.zipsurvey.com/
Sawtooth Technologies Inc (used by the Navy)	WebCanti 4.2 Mixed Mode	http://www.sawtooth.com/
Snap Surveys	Snap Professional Edition	http://www.snapsurveys.com/
Space-Time Research	Self Service Business Intelligence	http://www.str.com.au/
SPSS, Inc.	Desktop Author	http://www.spss.com/dimensions/
SPSS, Inc.	Dimensions	http://www.spss.com/dimensions/
SPSS, Inc.	Surveycraft	http://www.surveycraft.com/
Statpac, Inc.	Statpac online surveys	http://www.statpac.com/
SumQuest	SumQuest	http://www.sumquest.com/
Survey Analytics	QuestionPro	http://www.questionpro.com/
Enterprise Survey Software		
Survey Crafter, Inc.	Survey Crafter Professional	http://www.surveycrafter.com/interim2/default.asp
Survey System	Enterprise Edition	http://www.surveysystem.com/
Survey System	Professional Edition	http://www.surveysystem.com/
SurveyMethods, Inc.	Advanced Package	http://www.surveymethods.com/
SurveyMethods, Inc.	Professional Package	http://www.surveymethods.com/
SurveyMonkey	SurveyMonkey	http://www.surveymonkey.com/
SurveySaid	Basic Researcher Package	http://www.surveysaid.com/
SurveySaid	Internet Researcher Package	http://www.surveysaid.com/
SurveySaid	Total Researcher Package	http://www.surveysaid.com/
SurveySite	ComScore	http://www.comscore.com/solutions/surveysite.asp
SurveyView	SurveyView Enterprise Web Version	http://www.surveyview.com/
SurveyWriter, Inc.	SurveyWriter	http://www.surveywriter.com/site/index.html
Vision Control	Fusion	http://www.VisionCritical.com/Pro/
Vision Control	Panel +	http://www.VisionCritical.com/Pro/
Vovici Corp	EFM Community	http://www.vovici.com/

Vendor	Product	URL
Vovici Corp	EFM Feedback	http://www.vovici.com/
Webmyne Systems Inc.	MagicSurveyTool	http://www.magicsurveytool.com/
Widgix Software	SurveyGizmo	http://www.surveygizmo.com/
WISCO Computing	WISCO Survey Power	http://www.wiscosurvey.com/
WorlApp	Key Survey	http://www.keysurvey.com/
Xorbix Technologies, Inc.	Ioxphere	http://www.ioxphere.com/
ZapSurvey	ZapSurvey	http://zapsurvey.com/
Zarca Interactive, Inc.	Zarca	http://www.zarca.com/
Zoomerang	Zommerang Pro	http://www.zoomerang.com/

Appendix F

Market Analysis Software Testing Protocol

Software Testing Protocol: Steps to Test COTS Survey Software Product Finalists

Note: Bulleted numbers refer to criteria tested in each step.

1. Develop sample survey
 - 2.03
 - 2.08
 - 2.09
 - 2.10
 - 2.11
 - 2.12
 - 2.13
 - 2.14
 - 2.15
 - 2.16
 - 2.17
 - 2.19
 - 2.29
 - 3.01
 - 3.03
 - 3.05
 - 3.06
 - 3.07
 - 3.08
 - 3.09
 - 3.12
 - 3.13
 - 3.15
 - 3.16
 - 3.24
 - 3.27
 - 3.33
 - 4.01
2. Check if you can program branching by writing logic statements (as opposed to using drop-downs)
 - 3.19
3. Edit the “Next” navigation button’s label to say “Next Page”
 - 2.18
4. Try to label the first page as Page1test (if option is available).
 - 3.33
5. Set up the survey so that participants can review their answers prior to submitting the survey (if the option is given in the product).
 - 2.21
 - 3.36
 - 4.02
6. Set up the survey so that participants can withdraw or clear all their survey answers (if the option is given in the product).
 - 2.31
 - 3.25
7. Set up the survey so that participants can clear a page of answers (if option is given in product).
8. Try to print out the question properties for the survey (e.g., page, question variable name, question text, etc.)
 - 2.22
9. Display and then undisplay question numbers.
 - 3.04

10. Spell check all questions and instructions.
 - 2.20
 - 4.09
11. Set up the export variable name to be Q1test and Q2test for first two questions.
12. Set up the export response option names.
13. Save 2 questions and 1 response option to the question library.
 - 3.34
14. Export survey to Word document (or PDF) if this is the only option and rate how close to the online survey it is.
 - 2.23
 - 3.20
 - 3.21
15. Publish or Activate the survey (so it is finalized and in the field).
16. Upload participant list and set up initial email to distribute survey link.
 - 2.27
17. See if system will automatically create user IDs and passwords or if you need to assign them.
 - 2.26
18. Send link through mail campaign to everyone's ICF email
 - 4.12
19. Send link through email campaign at a separate time to participant's personal emails with a Word document attachment.
 - 3.28
20. Follow-up with participants in both batches to see what time they received the survey link email.
 - 2.27
21. Take Survey 1x with fake data (try to clear an answer and clear a page of data)
 - 2.07
22. Add a multiple choice question after Q1 asking their favorite color to see if questions can be added after survey is launched.
 - 3.22
23. Ask another team member to fill out first 2 pages of data.

24. Export to SPSS
 - 2.02
25. Check how data is in the newly added q (should have data for 2nd person, but no data for first person).
 - 3.29
26. Check tracking status of participants.
 - 2.25
 - 3.23
27. Remove an email from list so they do not receive reminder email.
28. Send reminder email to only those who did not complete the survey of XX rank
 - 2.04
29. Follow-up with person whose name was removed to ensure they did not receive reminder.
 - 2.24
30. Export data to SPSS, SAS, & Access (if allowed)
 - 2.02
 - 2.28
 - 3.02
 - 3.11

Appendix G

Market Analysis Software Testing Questionnaire

ARI Survey Software Test Questionnaire

<insert header picture>

Page1 Name label

Q. Respondent Info and Demographics **(Info will be piped from external source)**

FName: _____

LName: _____

Phone: _____

Email: _____

ID: _____

Age: _____

Division: _____ **(branch survey based on division)**

Rank: _____

DIV A (HR) questions **(section headings)**

Q: Are you familiar with survey Web applications?

Yes **(skip to Web app question)** **(write code for skipping)**

No

Q: How many job openings do you anticipate having within the next year, in the following divisions? (Matrix question- input/drop down)

Division(s)	# of openings (input/drop down)
DivA	
DivB	
DivC	

Q: Which of the following topics are related to DIV A? (Mark all that apply) **(Randomize answer choices q)**

A

B

C

D

Other: please specify: _____

Q: What is the percent of gross income is derived from the following sectors in division A?

Division A sectors	Percent allocation
A	
B	
C	
D	
Running total	

Q. WebApp(label): Will the Web application have the following capabilities below? Large matrix question (To find out formatting capability of application add question to library)

Topics	Yes/No (Dropdown options)	Level of criticality (Dropdown options)	Type of Application (Dropdown options)
Make a suggestion for one or two questions' variable export names and labels and response option values.	Yes/No		
Ability to skip/ask particular questions based upon record data/demographic data (i.e. piping data from preloaded demographic data file)	Yes/No		
Ability to have piped answers shown to ensure participant should be exited from survey (e.g., you selected you were not deployed over the past 12 months. Is this correct?)	Yes/No		
Ability to show previous answers in the text of current questions (i.e. piping into question text)	Yes/No		
Advanced Formatting (e.g., line spacing, line indent, column labels, line breaks, response column widths, wrapping in columns)	Yes/No		

DIV C (IT Help) questions

Q: Please select the products you have used in the past year mark all that apply (Piping In-Text Question)



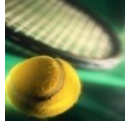
- Product A
- Product B
- Product C
- Product D

Q: Please rate your satisfaction with the products you selected in the previous question

<i>Products</i>	<i>Satisfaction</i>
<i> (Piped here) </i> (html question tags)	Very Satisfied Somewhat Neutral Somewhat Dissatisfied Very Dissatisfied



Q: Please associate an item (e.g.) to its sport (basketball) below. (Graphic question)

Item	Type of Sport (drop/down)
  	American Football Soccer Tennis

Q: Please rank and rate the following products. (Rate and rank)

Product	Rank (1-4)	Rate (1-10)
Product A	1-4	1-10
Product B	1-4	1-10
Product C	1-4	1-10
Product D	1-4	1-10

Q. How well did your pre-deployment training prepare you to perform full spectrum operations? (definition as a pop-up: The components of full spectrum operations are 1) Offense 2) Defense 3) Stability 4) Civil support)

- ☐ Very well
- ☐ Well
- ☐ Neither well nor poorly
- ☐ Poorly
- ☐ Very poorly
- ☐ Not applicable; I did not receive full spectrum operations training prior to deploying.

Q. This is a matrix question involving different types of response options.

Topics	Choice (Mark all that apply)	Choice (Mark only one)	Choice (Input/comment)	Choice (N/A exclusivity?)
A				
B				
C				
D				
E				

Q. How well did your pre-deployment training prepare you to perform full spectrum operations?

Appendix H

Market Analysis

COTS Web-Based Survey Software Review Results

Table H-1

COTS Web-Based Survey Software Review: Products Eliminated in First Round (based on “top few eliminator” criteria)

Vendor	Product	Reason Eliminated
Anderson Bell Corp	WebSurv	<ul style="list-style-type: none"> Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
ChumpSoft	perlIQuestionnaire	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
ChumpSoft	phpQuestionnaire	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Confermit	Confermit MR	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
CustomerSat	Self-Service	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Electronic Market Surveys	QS Survey System	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Ennect Online Survey Software	EnnectSurvey	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Golden Hills Software	SurveyGold	<ul style="list-style-type: none"> Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
Grapevine Surveys	Grapevine	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Gravic, Inc.	Remark Web Survey Software	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Hosted Survey	Basic ASP	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Hosted Survey	Enterprise API	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Infopoll	Infopoll	<ul style="list-style-type: none"> Rating of vendor reputation, size of company, and quality indicated questionable company longevity. Vendor is headquartered outside of the United States.
Inquisite	Inquisite EPM	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
InSite Survey Systems, Inc.	InSite Survey Systems	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
InstantSurvey	InstantSurvey	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.
Ipathia, Inc	SuperSurvey	<ul style="list-style-type: none"> Surveys must be developed and hosted on vendor’s servers.

Vendor	Product	Reason Eliminated
JetMan Productions, Inc.	SurveyKey	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Jive Software	Clearspace Community	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
LiveSurveys	LiveSurveys	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
mySmartSolutions	Surveyo	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
ObjectPlanet, Inc.	Opinio	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
PollCat	Survey Pro	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
PollCat	Surveys Enterprise	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
PollCat	Surveys for Workgroups	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
PulseWare	PulseWare	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Reliant Strategic Talent Management Solutions	ZipSurvey	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Sawtooth Technologies Inc (used by the Navy)	WebCanti 4.2 Mixed Mode	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
Space-Time Research	Self Service Business Intelligence	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
SPSS, Inc.	Surveycraft	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Statpac, Inc.	Statpac online surveys	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
SumQuest	SumQuest	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
Survey Analytics Enterprise Survey Software	QuestionPro	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Survey System	Enterprise Edition	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Survey System	Professional Edition	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
SurveyMethods, Inc.	Advanced Package	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.

Vendor	Product	Reason Eliminated
SurveyMethods, Inc.	Professional Package	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
SurveyMonkey	SurveyMonkey	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
SurveySaid	Basic Researcher Package	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
SurveySaid	Internet Researcher Package	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
SurveySaid	Total Researcher Package	<ul style="list-style-type: none"> ▪ Rating of vendor reputation, size of company, and quality indicated questionable company longevity.
SurveySite	ComScore	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
SurveyView	SurveyView Enterprise Web Version	<ul style="list-style-type: none"> ▪ Vendor is headquartered outside of the United States.
SurveyWriter, Inc.	SurveyWriter	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Vision Control	Fusion	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Vision Control	Panel +	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Webmyne Systems Inc.	MagicSurveyTool	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Widgix Software	SurveyGizmo	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
WISCO Computing	WISCO Survey Power	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Xorbix Technologies, Inc.	Ioxphere	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
ZapSurvey	ZapSurvey	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.
Zoomerang	Zommerang Pro	<ul style="list-style-type: none"> ▪ Surveys must be developed and hosted on vendor's servers.

Note. Products passed this round of review if the vendor reported that their 1) survey development software could be installed on ARI servers; 2) survey hosting software and software databases could be installed on ARI servers; 3) hosting software allowed individuals to enter survey questions and manipulate survey format through a graphical user interface (GUI) (i.e., non-coding interface); 4) company reputation, size, and quality combined was rated a 1= solid, or 2 = ok; and 5) company was headquartered within the United States.

Table H-2

COTS Web-Based Survey Software Review: Products Eliminated in Second Round (based on “critical” criteria)

Vendor	Product	Reason Eliminated
ActiveCampaign	iSalient	<ul style="list-style-type: none"> ▪ Product does not allow for 58% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not allow data to be exported to a format compatible with SPSS or SAS. ○ Product does not have the ability to do advanced branching forward in the survey. ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
Apian Software	SurveyPro	<ul style="list-style-type: none"> ▪ Product does not allow for 19% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not have the ability to do advanced branching forward in the survey. ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
Business Objects, an SAP Company	Business Intelligence	<ul style="list-style-type: none"> ▪ Vendor does not offer phone support and has not responded via email.
ClassApps	SelectSurvey ASP TM	<ul style="list-style-type: none"> ▪ Product does not allow for 16% of “critical” features, including... <ul style="list-style-type: none"> ○ Product is not as advanced as other programs.
ClassApps	SelectSurvey.NET	<ul style="list-style-type: none"> ▪ Product does not allow for 16% of “critical” features, including... <ul style="list-style-type: none"> ○ Product is not as advanced as other programs.
Digvey	Digivey +	<ul style="list-style-type: none"> ▪ Product does not allow for 26% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).

Vendor	Product	Reason Eliminated
Electronic Market Surveys	QS Survey System	<ul style="list-style-type: none"> ▪ Vendor only offers full-service survey process and does not allow for clients to develop surveys, analyze data, etc.
iMagic Software	iMagic Survey Pro	<ul style="list-style-type: none"> ▪ Vendor does not offer phone support and has not responded via email.
Prezza Technologies, Inc.,	Check Box Survey	<ul style="list-style-type: none"> ▪ Product does not allow for 29% of “critical” features.
Questionmark	Questionmark Perception	<ul style="list-style-type: none"> ▪ Product does not allow for 26% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
SPSS, Inc.	Desktop Author	<ul style="list-style-type: none"> ▪ Product does not allow for 32% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
Survey Crafter, Inc.	Survey Crafter Professional	<ul style="list-style-type: none"> ▪ Product does not allow for 16% of “critical” features, including... <ul style="list-style-type: none"> ○ Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
Vovici Corp	EFM Feedback	<ul style="list-style-type: none"> ▪ Product does not allow for 19% of “critical” features.

Note. Products passed this round of review if the vendor reported that greater than 85% of the “critical” criteria and all of the absolutely essential features were available.

Table H-3

COTS Web-Based Survey Software Review: Products Eliminated in Third Round (based on “improves greatly” criteria)

Vendor	Product	Reason Eliminated
Inquisite	Inquisite Survey	<ul style="list-style-type: none"> Product does not allow for 19% of features that would greatly improve survey development and administration.
PerfectForm (Formerly Quask)	PerfectForms (Formerly Quask)	<ul style="list-style-type: none"> Product does not allow for 17% of features that would greatly improve survey development and administration.
Qualtrics	SurveyZ!	<ul style="list-style-type: none"> Product does not allow for 11% of features that would greatly improve survey development and administration, including... <ul style="list-style-type: none"> Company does not typically allow for development and hosting on client servers (though can allow for it). Less positive reputation, size of company, or longevity of company than other products.
Snap Surveys	Snap Professional Edition	<ul style="list-style-type: none"> Product does not allow for 53% of features that would greatly improve survey development and administration, including... <ul style="list-style-type: none"> Product does not have the ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank).
SPSS, Inc.	Dimensions	<ul style="list-style-type: none"> Product portion with easy user interface has restrictive item limits (e.g., 100 pieces of information). Product portion with unlimited items allowed does not have easy graphical user interface (i.e., requires coding).

Note. Products passed this round of review if the vendor reported that greater than 90% of the “improves greatly” criteria were available.

Table H-4***COTS Web-Based Survey Software: Products Advanced to Final Testing Round ****

Vendor	Product	URL
Confirmit	Confirmit EFM	http://www.confirmit.com/
Vovici Corp	EFM Community	http://www.vovici.com/
WorlApp	Key Survey	http://www.keysurvey.com/
Zarca Interactive, Inc.	Zarca	http://www.zarca.com/

*See Appendix J for a detailed breakdown of testing results.

Appendix I

Market Analysis

**Detailed Functions and Features Review of Prezza Technologies Checkbox Survey,
Question Mark Perception, SPSS Desktop Author, and SPSS Dimensions**

Table I-1

Detailed Functions and Features Review of Prezza Technologies Checkbox Survey, Question Mark Perception, SPSS Desktop Author, and SPSS Dimensions

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
“CRITICAL” FEATURES						
2.01	Meets Army and DoD security regulations	✗	✗			
2.02	Ability to export data to a format compatible with SPSS or SAS	✓	✓ [†]	✓	✓	† Feature is available via Excel or ASCII file format.
2.03	Ability to do advanced branching forward in the survey	✓	✓	✓	✓	
2.04	Ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank)	✓	✗	✗	✓	
2.05	Unlimited number of responses to surveys	✓	✓	✗	✓	
2.06	Thorough and clear documentation/training	✓	✓	✓	✓	
2.07	Ability to create professional-looking surveys	✓	✓	✓	✓	
2.08	User-friendly developer interface, including ease of formatting question and response option text (e.g., bold, italics)	✓	✓	✓	✓	
2.09	Ability to skip/ask particular questions based upon record data/demographic data (i.e. piping data from preloaded demographic data file)	✓	✓	✓	✓	
2.10	Ability to show previous answers in the text of current questions (i.e. piping into question text)	✓	✗	✓	✓	
2.11	Ability to add HTML code to question text and/or question responses	✓	✓ ✗ [†]	✓	✓	† Html can be added within question text, but not question responses.

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
2.12	Advanced formatting (e.g., line spacing, line indent, column labels, line breaks, response column widths, wrapping in columns)	✓	✓	✓	✓	
2.13	Ability to write/code survey branching logic (rather than only having the option to use a drop down list)	✗	✗	✓	✓	
2.14	Ability to name (label) questions	✓	✓	✓	✓	
2.15	Ability to add comment boxes, so participants can add comments throughout the survey	✓	✓	✓	✓	
2.16	Ability to add graphics in the header (at beginning of survey)	✓	✓	✓	✓	
2.17	Ability to add graphics in the question text	✓	✓	✓	✓	
2.18	Ability to edit navigation button's label (e.g., help button, FAQ button, privacy act button, submit button)	✓	✓	✓	✓	
2.19	Customizable templates (e.g., theme or cascading style sheets)	✓	✓ [†]	✓	✓	[†] Feature is accomplished via the use of the survey's template controlled by style sheets.
2.20	Spell Check	✗	✓	✓	✓	
2.21	Offer respondents an easy way to review their answers to previous questions (i.e. without having to backtrack through every question) (e.g., jump function)	✗	✓ [†]	✗	✓	[†] The review happens through use of a jump feature that is embedded in some templates.
2.22	Ability to print out the question properties for the survey (e.g., page, question variable name, question text, and question scale)	✗	✓ [†]	✗	✗	[†] The authoring tool allows you to print out the survey.
2.23	Ability to export survey question text and response options to external document (e.g., MS Word)	✗	✓	✓	✓	

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
2.24	Ability to remove a respondent from the survey distribution list (during field period) so they do not receive future correspondence (e.g., reminder email)	✓	✓	✗	✓	
2.25	Ability to track the exact question the participant answered prior to abandoning the survey	✗	✗ [†]	✗	✓	[†] The program allows for survey developers to access the raw data within the program, where you can check the point at which each participant abandoned the survey, but it does not display in the tracking area.
2.26	Ability to automatically create and assign IDs/passwords	✓	✗ [†]	✗	✓	[†] Feature is unavailable, but could do it with additional consulting services.
2.27	Ability to filter email recipients (e.g., send only to participants who have not completed the survey, send initial email based on a participant database variable to overcome limits on sending mass emails)	✗	✗	✗	✓	
2.28	Ability to export variable names and labels (with data) for use in SPSS or SAS	✗	✓	✗	✓	
2.29	Ability to assign variable labels within the application	✓	✗	✓	✓	
2.30	Ability to assign export response option values	✓	✓	✓	✓	
2.31	Ability for participant to withdraw a survey (either one that has been electronically submitted or one that is partially complete)	✗	✗	✗	✗	
Percent of “Critical” Features Available		67.74%	70.97%	67.74%	93.55%	

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
“IMPROVES GREATLY” FEATURES						
3.01	Ability to assign export variable names	✓	✓	✓	✓	
3.02	Ability to export data directly to SAS	✗	✗	✗	✓	
3.03	Ability to have different types of response options in the same matrix question	✓	✓	✓	✓	
3.04	Automatic numbering with the option of displaying numbers or not	✓	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.05	The ability to add to and select from a response option library of commonly-used response option sets	✗	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.06	The ability to add to and select from a question library of full questions (question text and response options)	✓	✓	✓	✓	
3.07	Ability to show only the response options that were selected (or not) in a previous question (i.e. piping into response options)	✗	✗	✓	✓	
3.08	Ability to randomize the order of response options	✓	✓	✓	✓	
3.09	Automatically add response values as each response is added (e.g., summing percents)	✗	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.10	System keeps historical log files (i.e., that record upload, deletion, and emails to survey respondents) that cannot be deleted by ARI	✗	✓	✓	✓	
3.11	Ability to export data directly to Microsoft Access	✗	✓	✓	✓	
3.12	Ability to randomize the order of questions	✓	✓	✓ [¥]	✓ ^σ	^{¥σ} Feature is available via scripting snippets.

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
3.13	Ability to randomize the order of pages	✗	✓	✓ [¥]	✓ ^σ	^{¥σ} Feature is available via scripting snippets.
3.14	Qualitative data analysis functionality (e.g., keying in on words or phases)	✗	✗ [†]	✗ [¥]	✗ ^σ	[†] Plans include feature to be added in 2009. ^{¥σ} Feature is only available through coding in a mix of HTML, XML, and CSS.
3.15	Ability to supplement easy developer interface with HTML or other coding for more control	✗	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.16	Ability to create online help features (e.g., pop-up boxes or a mouse roll-over function) that displays definitions	✗	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.17	Ability to import survey questions from external application, such as MS Word	✗	✓	✓	✓	
3.18	Ability to branch participants backwards in the survey	✗	✓	✓	✓	
3.20	Ability to export identical survey (i.e., formatting included) to external document (e.g., MS Word)	✗	✓	✗ [¥]	✗ ^σ	^{¥σ} The questions are identical, but formatting is not included.
3.21	Ability to add comments to the survey once it is exported	✗	✗ [†]	✗	✓	[†] Plans include feature to be added in 2009.
3.22	Ability to change survey questions or response options after survey is in field without corrupting the data	✓	✗	✗	✓	
3.24	Ability to do ranking and rating questions in one question type	✓	✓	✓	✓	
3.25	Respondents ability to withdraw a survey (e.g., fill out paper form and decide not to submit)	✗	✓ [†]	✗	✓	[†] Feature requires Print & Scan add-on.
3.26	Ability to do sampling for extremely long surveys, so each participant does not have to complete entire survey	✗	✗	✓	✓	

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
3.27	Ability to have different response options within one matrix question (e.g., sometimes N/A and other times no N/A)	✗	✗ [†]	✓	✓	[†] Plans include feature to be added in 2009.
3.28	Ability to attach external documents to the dissemination email (e.g., a support letter from high in DoD) or ability to imbed email signatures into the dissemination email	✗	✗ [†]	✗	✓	[†] Plans include feature to be added in 2009. Requires additional consulting services.
3.29	Ability for participant to clear a page or a specific question (e.g., radio button)	✗	✗ [†]	✗	✓	[†] Plans include feature to be added in 2009.
3.30	Ability to export data directly to SPSS or SAS	✗	✓ [†]	✗	✓	[†] Data can be exported via ASCII or EXCEL.
3.31	System automatically creates an archive/back-up of questionnaire/data	✗	✓	✓ [¥]	✓ ^σ	^{¥ σ} The application has a backup utility that stores backup on the same machine. If you want to backup to a different location, you have to set that up outside the application.
3.32	Advanced Page Layout (e.g., resize objects, layer objects, snap objects to a grid, and lock a page)	✗	✗	✓ [¥]	✓ ^σ	^{¥ σ} Feature is only available through coding in a mix of HTML, XML, and CSS.
3.33	Ability to name (label) pages	✗	✗	✓	✓	
3.35	Administrative control, such as being able to remove cases or reset cases (rather than going into IMCEN to do so) to allow participants who were inappropriately exited from the survey back in	✗	✓	✗	✓	
Percent of “Improves Greatly” Features Available		25.00%	50.00%	68.75%	93.75%	

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Question mark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
“IMPROVES SOMEWHAT” FEATURES						
4.01	Ability to add graphics in response options	✓	✓	✓	✓	
4.03	Option of exporting only list of questions VS entire survey	✗	✓	✓	✓	
4.04	Optical scanning features	✗	✓ [†]	✗	✓	[†] Feature is accomplished via Print & Scan add-on.
4.05	Ability for platform to automatically dump test data once activated	✗	✗	✗	✓	
4.06	Feature that allow developers to easily check if skip patterns work without taking entire survey as participant	✗	✗	✓	✗	
4.07	Ability to do data cleaning and some data analysis in the application	✓	✓ [†]	✗	✓	[†] This can only be done within one of 12 canned reports, which is set to do some analysis for you. Any additional analyses you want must be done through a customized report that would require additional consulting services.
4.08	Ability to display basic figures/tables (e.g., cross tab) of certain important questions (e.g., ability to look at non-responses by rank)	✓	✓	✗	✓	
4.09	Spell check library where commonly-used words or acronyms can be added	✗	✗	✓	✗	
4.10	Meta-data capabilities	✗	✓	✓	✓	
4.11	Ability to store the data in an encrypted format	✗	✗	✗ [¥]	✗ ^σ	^{¥σ} Feature is not officially supported until version 5.6.

Criteria #	Criteria Description	Prezza Technologies Check Box Survey	Questionmark Perception	SPSS Desktop Author	SPSS Dimensions*	Comments
4.12	Ability to create professional-looking emails	✓	✓	✗	✓	
4.13	Publish a survey to a transportable file that can be run on local machines (e.g., non-Internet)	✗	✓ [†]	✓	✓	[†] Feature is available via Questionmark To Go add-on.
Percent of “Improves Somewhat” Features Available		33.00%	66.66%	50.00%	75.00%	
Total Percent of Features Available		44.00%	72.00%	65.53%	93.33%	

✓ Feature available; ✗ Feature not available.

* SPSS Dimensions has a development limitation of 100 pieces of information (i.e., surveys with more than 100 pieces of information, including questions and instructions, can only be developed through coding). This limitation caused us to eliminate SPSS dimensions from further review. Note: Criteria 3.19, 3.23, 3.34, 3.36, and 4.02 were eliminated because of duplication with other criteria listed.

Appendix J

Market Analysis

Detailed Functions and Features Review of COTS Web-based Survey Software Finalists

Table J-1***Detailed Functions and Features Review of COTS Web-based Survey Software Finalists***

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
“CRITICAL” FEATURES						
2.01	Meets Army and DoD security regulations	✓ (NA)	✓ (NA)	✓ (NA)	✓ (NA)	
2.02	Ability to export data to a format compatible with SPSS or SAS	✓ (5)	✓ (5)	✓ (5)	✓ [§] (5)	§ Data can be exported to MS Excel, CSV, SPSS, XML, or MS Access format.
2.03	Ability to do advanced branching forward in the survey	✓ (5)	✓ (5)	✓ (5)	✓ (2.5)	
2.04	Ability to filter reminder email recipients (e.g., send to specific sub-samples based on rank)	✓ (5)	✓ (3.5)	✓ (2.5)	✓ (5)	
2.05	Unlimited number of responses to surveys	✓ (NA)	✓ [¥] (NA)	✓ (NA)	✓ (NA)	¥ There is a database limit of approximately 4,000 variables.
2.06	Thorough and clear documentation/training	✓ (4)	✓ (4)	✓ (4.5)	✓ (2.5)	
2.07	Ability to create professional-looking surveys	✓ (5)	✓ (4.5)	✓ (5)	✓ (3)	
2.08	User-friendly developer interface, including ease of formatting question and response option text (e.g., bold, italics)	✓ (4.5)	✓ (5)	✓ (1.5)	✓ (4)	
2.09	Ability to skip/ask particular questions based upon record data/demographic data (i.e. piping data from preloaded demographic data file)	✓ (5)	✓ (5)	✓ (5)	✓ (3.5)	
2.10	Ability to show previous answers in the text of current questions (i.e. piping into question text)	✓ (4)	✓ (5)	✓ (1)	✓ (2.5)	
2.11	Ability to add HTML code to question text and/or question responses	✓ (5)	✓ (5)	✓ (4.5)	✓ (5)	

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
2.12	Advanced formatting (e.g., line spacing, line indent, column labels, line breaks, response column widths, wrapping in columns)	✓ (5)	✓ (4)	✓ (2)	✓ (4)	
2.13	Ability to write/code survey branching logic (rather than only having the option to use a drop down list)	✓ (3)	✓ (NA)	✓ (3.5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days.
2.14	Ability to name (label) questions	✓ (5)	✗ (NA)	✓ (5)	✓ [§] (5)	[§] Feature will be available in the next release on 12/15/08.
2.15	Ability to add comment boxes, so participants can add comments throughout the survey	✓ (5)	✓ (5)	✓ (4.5)	✓ (5)	
2.16	Ability to add graphics in the header (at beginning of survey)	✓ (5)	✓ (5)	✓ (5)	✓ (5)	
2.17	Ability to add graphics in the question text	✓ (5)	✓ (4.5)	✓ (2)	✓ (2)	
2.18	Ability to edit navigation button's label (e.g., help button, FAQ button, privacy act button, submit button)	✓ (5)	✓ (5)	✓ (5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built if requested.
2.19	Customizable templates (e.g., theme or cascading style sheets)	✓ (4)	✓ (5)	✓ (4.5)	✓ (2.5)	
2.20	Spell Check	✓ (5)	✓ (5)	✓ ^σ (2)	✓ (5)	^σ Spell check feature exists on a question by question basis only.
2.21	Offer respondents an easy way to review their answers to previous questions (i.e. without having to backtrack through every question) (e.g., jump function)	✓ (2.5)	✓ (4)	✓ (5)	❖ [§] (NA)	[§] Feature is not yet available, but a link to a PDF document that displays answers for review can be built in 30 days.
2.22	Ability to print out the question properties for the survey (e.g., page, question variable name, question text, and question scale)	✓ (5)	✗ (NA)	✓ (3.5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 30 days.

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
2.23	Ability to export survey question text and response options to external document (e.g., MS Word)	✓ (5)	✓ ^σ (5)	✓ (5)	✓ (5)	^σ Survey exports to PDF format only.
2.24	Ability to remove a respondent from the survey distribution list (during field period) so they do not receive future correspondence (e.g., reminder email)	✓ (5)	✓ (5)	✓ (5)	✓ (5)	
2.25	Ability to track the exact question the participant answered prior to abandoning the survey	✗ [†] (NA)	✓ (4)	✓ (2)	✓ [§] (NA)	[†] This feature can only be performed through exporting the data. There is a filter that allows survey developers to export only incomplete data.
2.26	Ability to automatically create and assign IDs/passwords	✗ (NA)	✗ [¥] (NA)	✗ (NA)	✓ [§] (4.5)	[§] Feature will be available in the next release on 12/15/08. [¥] This product automatically provides participants with a unique link, serving a similar purpose.
2.27	Ability to filter email recipients (e.g., send only to participants who have not completed the survey, send initial email based on a participant database variable to overcome limits on sending mass emails)	✓ (5)	✓ (5)	✓ (2.5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days. Can currently select manually which email addresses to send emails.
2.28	Ability to export variable names and labels (with data) for use in SPSS or SAS	✓ (3)	✓ (4)	✓ (5)	✓ ✗ [§] (4.5)	[§] Export directly to SPSS will be available in the next release on 12/15/08; Export to SAS is expected to be added in 2009.

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
2.29	Ability to assign variable labels within the application	✓ (NA)	✗ (NA)	✓ (3.5)	✗ NA	
2.30	Ability to assign export response option values	✓ (5)	✓ (5)	✓ (5)	✓ (5)	
2.31	Ability for participant to withdraw a survey (either one that has been electronically submitted or one that is partially complete)	✗ (NA)	✗ (NA)	✗ (NA)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days.
Percent of “Critical” Features Available		90.32%	83.87%	93.55%	74.19%	
“Critical” Feature Average Usability Rating		4.60	4.67	3.85	4.07	
“IMPROVES GREATLY” FEATURES						
3.01	Ability to assign export variable names	✓ (5)	✗ (NA)	✗ (NA)	✓ [§] (5)	[§] Feature will be available in the next release on 12/15/08.
3.02	Ability to export data directly to SAS	✗ (NA)	✗ ^σ (NA)	✗ (NA)	✓ [§] (NA)	^σ Data can be exported as a CSV, MS Excel, SPSS, or XML format. [§] The ability to export directly SAS is expected in January 2009.
3.03	Ability to have different types of response options in the same matrix question	✓ (3.5)	✓ (4)	✓ (2)	✓ (4.5)	
3.04	Automatic numbering with the option of displaying numbers or not	✗ (NA)	✗ (NA)	✓ (5)	✓ (5)	
3.05	The ability to add to and select from a response option library of commonly-used response option sets	✓ (3.5)	✓ (5)	✓ (5)	✓ (5)	
3.06	The ability to add to and select from a question library of full questions (question text and response options)	✓ (4)	✓ (5)	✓ (5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days.

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
3.07	Ability to show only the response options that were selected (or not) in a previous question (i.e. piping into response options)	✓ (4)	✓ (4)	✓ (3.5)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days. This feature would show all answers from previous questions, but grey out non-relevant answers.
3.08	Ability to randomize the order of response options	✓ 4.5	✓ (5)	✓ (5)	✓ (5)	
3.09	Automatically add response values as each response is added (e.g., summing percents)	✓ (5)	✓ (5)	✓ (5)	✓ (5)	
3.10	System keeps historical log files (i.e., that record upload, deletion, and emails to survey respondents) that cannot be deleted by ARI	✓ (NA)	✓ (NA)	✓ (NA)	✓ (NA)	
3.11	Ability to export data directly to Microsoft Access	✗ (NA)	✗ (NA)	✗ (NA)	✓ (5)	
3.12	Ability to randomize the order of questions	✓ (5)	✗ (NA)	✓ (4)	✓ [§] (5)	[§] Feature will be available in the next release on 12/15/08.
3.13	Ability to randomize the order of pages	✓ (4.5)	✓ [¥] (NA)	✓ (4.5)	❖ (NA)	[¥] Feature will be available in the next release on 12/2008.
3.14	Qualitative data analysis functionality (e.g., keying in on words or phrases)	✓ (NA)	✗ ^σ (NA)	✓ (NA)	✗ (NA)	^σ Filters that sort open-ended comments based on a word or set of words are available.
3.15	Ability to supplement easy developer interface with HTML or other coding for more control	✓ (5)	✓ (4)	✓ (4.5)	✓ (5)	
3.16	Ability to create online help features (e.g., pop-up boxes or a mouse roll-over function) that displays definitions	✓ (3.5)	✓ [¥] (NA)	✓ ^σ (3.5)	❖ [§] (NA)	[¥] Feature will be available in the next release on 12/2008. ^σ Can create a question mark icon which displays a mouse-over pop-up window. [§] Feature is not yet available, but can be built in 60 days.

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
3.17	Ability to import survey questions from external application, such as MS Word	✗ [†] (NA)	✓ (4)	✓ (5)	✖ [§] (NA)	[†] Plans include feature to be added in 2009. [§] Feature is not yet available, but can be built in 90 days.
3.18	Ability to branch participants backwards in the survey	✗ (NA)	✗ (NA)	✗ (NA)	✗ [§] (NA)	[§] Feature is not incorporated, but the restriction can potentially be lifted to allow this.
3.20	Ability to export identical survey (i.e., formatting included) to external document (e.g., MS Word)	✗ (NA)	✗ [¥] (NA)	✓ ^σ (5)	✗ [§] (NA)	[¥] The product exports the survey with identical questions, but the formatting does not export. ^σ Feature exports to PDF only. [§] Ability to print the survey and all pages at a time (includes formatting) but cannot export to Word or PDF. There is an option to allow participants to print the survey as well.
3.21	Ability to add comments to the survey once it is exported	✓ (5)	✓ (5)	✓ (2.5)	✗ (NA)	
3.22	Ability to change survey questions or response options after survey is in field without corrupting the data	✓ (5)	✓ [¥] (3.5)	✓ (3.5)	✗ [§] (NA)	[¥] Deleting or changing questions is done through hiding old questions and potentially creating a new question. All features are able to be changed through HTML, but this is not recommended. [§] Feature allows fixing of typos, but not adding of questions.

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
3.24	Ability to do ranking and rating questions in one question type	✓ (3.5)	✓ (4.5)	✗ ^σ (NA)	❖ [§] (NA)	^σ The ranking question format takes on the form of 3 columns with all the responses and the participant chooses one response from each column. [§] Feature is not yet available, but can be built fairly easily.
3.25	Respondents ability to withdraw a survey (e.g., fill out paper form and decide not to submit)	✗ [†] (NA)	✗ (NA)	✗ (NA)	❖ [§] (NA)	[†] Although a respondent is not able to withdraw a survey, one is able to clear their responses on a specific page.
3.26	Ability to do sampling for extremely long surveys, so each participant does not have to complete entire survey	✓ (NA)	✓ (NA)	✓ (NA)	✓ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days. [§] Can be achieved through creating sub surveys and randomly directing a percent of participants to each survey.
3.27	Ability to have different response options within one matrix question (e.g., sometimes N/A and other times no N/A)	✓ (3)	✗ (NA)	✗ (NA)	✓ (4)	
3.28	Ability to attach external documents to the dissemination email (e.g., a support letter from high in DoD) or ability to imbed email signatures into the dissemination email	✗ [†] (NA)	✗ [¥] (NA)	✓ ^σ (5)	✗ [§] (NA)	^{†¥} The product does not allow the attachment of external documents to the dissemination email. However, the program is able to include a link to a document that is posted as Web page somewhere else. ^σ Can attach any document with a 3 MB limit per file. [§] Can embed a link in the email to an external

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
						document.
3.29	Ability for participant to clear a page or a specific question (e.g., radio button)	✓ (3.5)	✓ (5)	✗ (NA)	✓ (5)	
3.30	Ability to export data directly to SPSS or SAS	✓ [†] (5)	✓ (5)	✓ (5)	✓ ✗ [§] (4.5)	[†] The program only allows data to be exported directly to SPSS. [§] For SPSS, there is currently the need to go through additional steps to export to a “.sav” file (i.e., SPSS data file). These extra steps will be eliminated in the next release on 12/15/08. The ability to export directly SAS is expected in January 2009.
3.31	System automatically creates an archive/back-up of questionnaire/data	✗ [†] (NA)	✓ (NA)	✓ (NA)	✓ [§] (NA)	[†] Plans include feature to be added in 2009. [§] Can incorporate a database program to create a real-time backup. The product saves transaction logs on a different system.
3.32	Advanced Page Layout (e.g., resize objects, layer objects, snap objects to a grid, and lock a page)	✓ (NA)	✓ [¥] (NA)	✓ (3)	✗ [§] (NA)	[¥] This is performed through HTML only. [§] Can do this through HTML, but not through the graphical user interface (GUI) platform.
3.33	Ability to name (label) pages	✓ (5)	✗ (NA)	✗ (NA)	❖ [§] (NA)	[§] Feature is not yet available, but can be built in 60 days.
3.35	Administrative control, such as being able to remove cases or reset cases (rather than going into IMCEN to do so) to allow participants who were inappropriately exited from the survey back in	✓ (NA)	✓ (NA)	✓ (NA)	✓ (NA)	

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
Percent of “Improves Greatly” Features Available		71.88%	62.50%	71.88%	50.00%	
“Improves Greatly” Feature Average Usability Rating		4.31	4.54	4.22	4.67	
“IMPROVES SOMEWHAT” FEATURES						
4.01	Ability to add graphics in response options	✓ (5)	✓ (4.5)	✓ (4)	✓ (2.5)	
4.03	Option of exporting only list of questions VS entire survey	✓ (NA)	✗ (NA)	✗ (NA)	✓ (NA)	
4.04	Optical scanning features	✓ (NA)	✗ (NA)	✓ (NA)	✗ [§] (NA)	§ Can work with Zarca in order to get optical scanning. The software allows data to be imported from Excel.
4.05	Ability for platform to automatically dump test data once activated	✗ (NA)	✓ (5)	✓ (NA)	✓ [§] (NA)	§ As part of the export wizard, the feature gives you the option to export all data (i.e., test and real data) or just real data (i.e., no test data).
4.06	Feature that allow developers to easily check if skip patterns work without taking entire survey as participant	✓ (4.5)	✗ (NA)	✓ (NA)	✓ [§] (NA)	§ Within the preview, you can preview specific pages with functional skips.
4.07	Ability to do data cleaning and some data analysis in the application	✓ (NA)	✓ (NA)	✓ (NA)	✓ (NA)	
4.08	Ability to display basic figures/tables (e.g., cross tab) of certain important questions (e.g., ability to look at non-responses by rank)	✓ (NA)	✓ (4)	✓ (NA)	✓ (NA)	
4.09	Spell check library where commonly-used words or acronyms can be added	✗ (NA)	✓ (5)	✓ (4)	✓ [§] (NA)	§ Feature will be available in the next release on 12/15/08.
4.10	Meta-data capabilities	✓ (NA)	✓ (NA)	✓ (NA)	✗ (NA)	

Criteria #	Criteria Description	Confirmit EFM	Vovici EFM Community	WorldApp Key Survey	Zarca Interactive*	Comments
4.11	Ability to store the data in an encrypted format	✓ (NA)	✓ (NA)	✓ (NA)	✕ [§] (NA)	[§] Feature is not available, but can built fairly easily.
4.12	Ability to create professional-looking emails	✓ (5)	✓ (4)	✓ (5)	✓ (4)	
4.13	Publish a survey to a transportable file that can be run on local machines (e.g., non-Internet)	✓ [†] (NA)	✓ (NA)	✓ ^σ (NA)	✕ (NA)	[†] This ability can be performed on a portable tablet, but not a laptop. ^σ Feature will be added in next release in 12/2008.
4.14	Differentiates in tracking between "partially complete" and "not started" and filter emails based on this differentiation	✓ (5)	✕ (NA)	✕ ^σ (NA)	❖ [§] (NA)	^σ Plans include feature to be added in 2009. [§] Feature is not available, but can be built in 30 days.
Percent of "Improves Somewhat" Features Available		84.62%	69.23%	84.62%	61.54%	
"Improves Somewhat" Feature Average Usability Rating		4.88	4.50	4.33	3.25	
Total Percent of Features Available		81.58%	72.37%	82.89%	61.84%	
Total Usability Ratings of Features		4.54	4.64	4.06	4.28	

✓ Feature available; ✕ Feature not available; ❖ Feature not standard, but can be built; Numbers in parentheses indicate average usability ratings.

* Features that are not offered, but can be built by Zarca will not cost extra as long as they are indicated in the initial Statement of Work (SOW).

Note: Criteria 3.19, 3.23, 3.34, 3.36, and 4.02 were eliminated because of duplication with other criteria listed.

Appendix K

Cost Analysis

Detailed Cost Estimates for COTS Survey Software Product Finalists

Table K-1***Cost of Conformat EFM Professional***

	Price	Number of times charged in 5-year period	Number of units	Notes
BASE FEATURES COST				
Base cost	\$22,500.00	5	Server License includes access to Conformat Design, Deploy, Export, Rapid Results, Data Processing, etc. for up to 25 Professional users	
Developer licenses	\$800.00	5	1 additional professional user	
Reporting licenses	\$0.00	5	Up to 25 Professional users	Reporting licenses are not sold separately from developer user licenses.
Cost per survey	\$0.50	variable (e.g., 60,000)	1 completed survey	Per unit price reflects range of 50,000 - 99,999 units.
Additional workgroups	N/A		N/A	
Upgrade fees	\$0.00		As upgrades are available	Included in yearly base cost.
Installation on ARI servers	\$2,625.00 + travel expenses	1		
Yearly support/maintenance fees	\$0.00	5		Included in yearly base cost.
ADVANCED FEATURES COST				
API/XML Web services	\$13,500.00	5		

	Price	Number of times charged in 5-year period	Number of units	Notes
MobileSurvey PC (offline client for laptops, etc.)	\$180.00	5	1 seat	
Server Security (FTP & Encryption)	\$4,500.00	5		Used for system integration in file upload and downloads.
Image File Library	\$1,500.00	5		Recommended to aid in including any graphics in survey.
PDF Report Exports	\$3,200.00	5		Used to export reports in PDF format.
Private Labeling (removing Vendor name from surveys and emails)	\$0.00		unlimited	
CUSTOM SERVICES COST				
Custom program development	\$168.75	variable	1 hour	
TRAINING COST				
Training guides	\$0.00	1	2 full sets of documentation	Additional documentation can be purchased at \$150 per set.
Private Training (at ARI)	\$1,350.00	1	Up to 6 students	
Non-Private Training	N/A		N/A	
TOTAL ESTIMATED COST				
Estimated 1st-year cost*:	\$58,075			
Estimated 5-year cost*:	\$274,075			

Note: Confrimit is on the GSA schedule, so all prices reflect GSA unit prices.

Note: Confrimit is willing to negotiate price by a small margin if cost is an issue.

* Cost for Confirmit EFM Professional includes software with up to 25 developer and reporting licenses, unlimited number of surveys developed, 60,000 completed survey responses per year, Image File Library add-on capability, a Confirmit representative's assistance with installation on ARI's servers (assuming \$1,000 in travel costs), private labeling, and 2 days of private training for up to 6 students.

Table K-2
Cost of Vovici EFM Community

	Price	Number of times charged in 5-year period	Number of units	Notes
BASE FEATURES COST				
Base cost	\$9,495.00	5	1 workgroup with 1 administrator user license	A workgroup is an independent version of the platform on which the users develop and administer surveys.
Developer licenses	\$950.00	5	1 license	
Reporting licenses	\$950.00	5	5 licenses	
Cost per survey	\$0.00		Unlimited	
Additional workgroups	\$4,750.00	5	1 additional workgroup	
Upgrade fees	\$0.00		variable	
Installation on ARI servers	\$2,500.00 + travel expenses	1	1 day on onsite assistance	Remote assistance is included in base cost.
Yearly support/maintenance fees	\$0.00	5	unlimited	Included in yearly base cost.
ADVANCED FEATURES COST				
API/XML Web services	\$1,425.00	5	1 system synchronization	
MobileSurvey PC (offline client for laptops, etc.)	\$285.00	5	1 license	
Server Security (FTP & Encryption)	N/A		N/A	
Image File Library	\$0.00	5	unlimited	Size and amount of pictures depends on the server.
PDF Report Exports	\$0.00	5	unlimited	

	Price	Number of times charged in 5-year period	Number of units	Notes
Private Labeling (removing Vendor name from surveys and emails)	\$0.00		unlimited	
CUSTOM SERVICES COST				
Custom program development	N/A		N/A	
TRAINING COST				
Training guides	\$50.00	1	1 guide	
Private Training (at ARI)	\$2,000.00 + travel expenses	1	1 day	
Non-Private Training	\$1,320.35	1	3-day training; per student	In Dulles, VA.
TOTAL ESTIMATED COST				
Estimated 1st-year cost*:	\$18,995			
Estimated 5-year cost*:	\$75,975			

Note: Vovici Corp is on the GSA schedule, so all prices reflect GSA unit prices.

* Cost for Vovici EFM Community includes 1 workgroup with 5 developer licenses, 5 reporting licenses, unlimited number of surveys, unlimited number of responses, a Vovici representative's assistance with installation on ARI's servers (with estimated \$100 of Vovici representative travel costs), 1 paper training guide, and 1 day of private training (with estimated \$100 of Vovici representative travel costs).

Table K-3
Cost of WorldApp Key Survey

	Price	Number of times charged in 5-year period	Number of units	Notes
BASE FEATURES COST				
Base cost	\$20,000.00	1	1 administrative user license	
Developer licenses	\$4,200.00	1	1 license	
Reporting licenses	\$0.00	1		Reporting licenses are not sold separately from developer user licenses.
Cost per survey	\$0.00		unlimited	
Additional workgroups	N/A		N/A	
Upgrade fees	\$0.00		variable	
Installation on ARI servers	\$150.00	1	1 hour onsite assistance	Installation should take about 1-2 days.
Yearly support/maintenance fees	18% of 1st year product and features cost	5		
ADVANCED FEATURES COST				
API/XML Web services	\$7,000.00	1		
MobileSurvey PC (offline client for laptops, etc.)	N/A		N/A	
Server Security (FTP & Encryption)	N/A		N/A	
Image File Library	\$0.00	1	unlimited	
PDF Report Exports	\$0.00	1	unlimited	
Private Labeling (removing Vendor name from surveys)	\$2,000.00	1	unlimited	

	Price	Number of times charged in 5-year period	Number of units	Notes
and emails)				
CUSTOM SERVICES COST				
Custom program development	\$200.00	variable	1 hour	
TRAINING COST				
Training guides	\$50.00	1	1 guide	
Private Training (at ARI)	\$1,500.00	1	1 day	
Non-Private Training	\$150.00	1 hour	Up to 25 students	Web-based training; 2-4 hours suggested.
TOTAL ESTIMATED COST				
Estimated 1st-year cost*:	\$49,029			
Estimated 5-year cost*:	\$78,945			

* Cost for WorldApp Key Survey includes software with 5 developer and reporting licenses, unlimited number of surveys, unlimited number of responses, a WorldApp representative's assistance with installation on ARI's servers (8 hours), private labeling, 1 paper training guide, and 1 day of private training for up to 25 students.

Table K-4
Cost of Zarca Interactive

	Price	Number of times charged in 5-year period	Number of units	Notes
BASE FEATURES COST				
Base cost	\$65,000.00	1	1 software with unlimited users.	
Developer licenses	\$0.00	1	unlimited	
Reporting licenses	\$0.00	1	unlimited	Reporting licenses are not sold separately from developer user licenses.
Cost per survey	\$0.00		unlimited	
Additional workgroups	N/A		N/A	
Upgrade fees	\$0.00		variable	
Installation on ARI servers	\$15,000.00	1		
Yearly support/maintenance fees	\$15,000.00	5		
ADVANCED FEATURES COST				
API/XML Web services	\$5,000.00			Varies depending on ARI's servers and how much programming is needed.
MobileSurvey PC (offline client for laptops, etc.)	N/A		N/A	
Server Security (FTP & Encryption)	N/A		N/A	
Image File Library	N/A		N/A	
PDF Report Exports	N/A		N/A	

	Price	Number of times charged in 5-year period	Number of units	Notes
Private Labeling (removing Vendor name from surveys and emails)	\$7,000.00	1	unlimited	
CUSTOM SERVICES COST				
Custom program development	\$135.00	variable	1 hour	Only applies to customization after SOW is written; Any customization written into the initial SOW is included in base charge.
TRAINING COST				
Training guides	\$0.00			Guide is available electronically.
Private Training (at ARI)	\$0.00	1	1 day	Initial training.
Non-Private Training	\$0.00	5	Unlimited number of students	Web-based training; Available for training users after initial training is given.
TOTAL ESTIMATED COST				
Estimated 1st-year cost*:	\$102,000			
Estimated 5-year cost*:	\$162,000			

* Cost for Zarca includes software with unlimited developer and reporting licenses, unlimited number of surveys, unlimited number of responses, a Zarca representative's assistance with installation on ARI's servers, private labeling, and all training (including electronic training guides, initial private training at ARI, and follow-up Web-based training for users later added).